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ILLINOIS AGRICULTURAL WATER QUALITY MANAGEMENT PROGRAMS - A STATUS REPORT.

CONFERENCE PROCEEDINGS OF APRIL 13, 1982

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Illinois Department of
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ILLINOIS' AGRICULTURAL WATER QUALITY MANAGEMENT PROGRAMS

- A STATUS REPORT -

Conference Proceedings of
April 13, 1982

at
Department of Agriculture Auditorium
State Fairgrounds
Springfield, Illinois

Sponsored by:

Illinois Environmental Protection Agency
Illinois Department of Agriculture
Illinois Department of Energy and Natural Resources

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State of Illinois

Michael B. Witte, Director
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PREFACE

A one-day conference was held on April 13, 1982, for former members of the Task Force on Agriculture Non-Point Sources of Pollution and others involved in or affected by implementation of Illinois' Water Quality Management Plan. The session provided a forum for interchange of information regarding the status of implementation programs recommended in the Plan.

Since the Plan is scheduled for a 5-year review and evaluation in 1984, discussion topics focused on the following:

> Is adequate progress being made to achieve the goals set forth in the Plan?
>
> Have the water quality problems identified in the Plan been adequately assessed?
>
> Have the designated management agencies executed effective programs?
>
> Is there a coordinated effort towards achieving the Plan's goals?
>
> Is the voluntary approach successful?

Views on these questions and other relevant issues concerning soil erosion, pesticides, fertilizers, livestock wastes and forestry were addressed in the conference presentations and included in the statements prepared for this report.

ILLINOIS' AGRICULTURAL WATER QUALITY MANAGEMENT PROGRAMS
- A STATUS REPORT -

Conference Proceedings

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Appreciation is extended to the Illinois Department of Agriculture Division of Natural Resources staff who assisted with the conference organization and provided meeting room accommodations.

Support in conducting the conference and developing the proceedings from the Illinois Environmental Protection Agency Division of Water Pollution Control, Word Processing Center, and Public Participation personnel and staff of the Department of Energy and Natural Resources is also appreciated.

Most of all, the program participants are to be commended for their excellent presentations and statements prepared for the proceedings document.

A.G. Taylor

A. G. Taylor, Program Chairman
Illinois Environmental Protection Agency

Marie Lauricella

Marie Lauricella, Project Officer
Illinois Department of Energy and Natural Resources

SUMMARY OF RECOMMENDATIONS
IN THE
ILLINOIS WATER QUALITY MANAGEMENT PLAN

Jim Pendowski
Environmental Protection Specialist
Division of Water Pollution Control
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Problem Assessment

The agricultural portion of the WQM plan was comprised of subsections covering: fertilizers, pesticides, soil erosion, livestock waste, forestry, and fruit production. An Agricultural Taskforce consisting of agricultural and environmental groups was formed to assist the Agency in developing problem assessments. The Taskforce was also responsible for recommending Best Management Practices (BMP's) to address significant problems and outline legal, financial and institutional arrangements necessary to implement recommended BMP's.

The most severe agricultural related problem is soil erosion and sedimentation. Gross erosion was estimated to exceed 180 million tons annually in Illinois with 158 million tons emanating as sheet and rill erosion from cropland. Related estimates indicated over 8,000 acre-feet of storage capacity were lost each year in the State's impoundments. Replacement of lost capacity was estimated in 1978 dollars at $17.7 million annually in terms of dredging or $3.1 million annually in terms of new lake construction. Other problems associated with soil erosion include transport of residual pesticide chemicals and plant nutrients.

Principal concerns in livestock production are with small open feedlots scattered throughout Illinois. Of 58,000 feedlots in the State identified in 1978, an estimated 4,600 beef, 1,300 dairy and 10,200 swine feedlots needed runoff controls.

Some persistent organochlorine insecticides, especially DDT and Dieldren, were noted as causing contaminated water and aquatic organisms. High levels of these chemicals in fish have prompted consumption warnings by the Department of Conservation for many Illinois lakes and forced the closing of some to commercial fishing. The replacement compounds for the chlorinated hydrocarbons were found to be less persistent but more toxic resulting in more reported fish kills. Disposal of used pesticide containers and dilute rinsate solutions from custom spraying equipment were noted as an area of some concern.

Eighteen public water supplies were identified as periodically exceeding nitrate levels considered safe for consumption by infants in regard to contracting methemoglobanemia. A majority of Illinois

surface waters violate phosphorus and heavy metal standards at intervals throughout the year. Numerous studies reviewed implied a potential for contamination from fertilizer applications. None of the studies provided conclusive quantitative data evaluating the extent of contamination from that source. Potential for water quality degradation is greatest when fertilizer applications exceed amounts utilized by crops, or when inadequate application procedures are practiced.

Overall water quality degradation in Illinois due to forestry activities is relatively small. Localized problems from timber harvesting are few and are attributed to poor management. The major water quality degrading factor from Illinois' forested areas was assumed to be sediments. Fertilizers and pesticides are not extensively used on Illinois timber. Activities which generate sediment are: (1) methods of forest product removal, (2) conversion of forested areas to other uses, (3) livestock grazing, and (4) inappropriate use of recreational vehicles.

It was concluded that fruit growing in Illinois is an insignificant source of nonpoint pollution. Apple and peach orchards occupy only 15,499 acres or .1 percent of Illinois cropland. Nearly 90% of the orchard acreage was considered well managed to prevent water pollution. Summaries of a fruit grower survey show apple orchards occupy 75% of the total orchard acreage, and all apple orchards are maintained in continuous sod cover. About 50% of the peach orchards, occupying 25% of the total orchard acreage, are grown in continuous sod or cover crops. Continuous sod cover is considered the most effective management practice in controlling soil erosion and potential water pollution from fruit growing activities.

Estimates of costs of erosion control practices and changes in land use that might occur were obtained by surveying district soil conservationsists, and use of a mathematical model of the cornbelt. Two options were considered. The high-terracing option, calling for 4.1 million acres of terracing, 2.4 million acres of contouring, and 7.6 million acres of conservation tillage would cost $1.6 billion. A low-terracing option calling for 1.1 million acres of terracing, 5.8 million acres of contouring, and 16.5 million acres of conservation tillage would cost $748 million. Annual maintenance of the two systems after installation would require $36.9 million and $15.3 million respectively. These estimates were based on 1977prices and included expenditures for construction, design, planning, soil surveying, education, and Soil and Water Conservation District budgets. In addition to financial costs, it was estimated that nearly 900,000 acres of cropland needed to be converted to hay, pasture, or woodland for erosion reduction.

Recommended control practices were aimed at reducing erosion to tolerance levels for maintaining productivity (SCS standards). A 58% reduction in gross erosion is expected if needed practices are employed.

Estimated costs for structural measures necessary to control runoff from feedlots in Illinois indicate total costs for holding pond systems with irrigation would be as high as $86 million or if vegetative filter systems are used as high as $73 million (in 1978 dollars). These reflect installation costs. No estimates for maintenance or operation, or land taken out of production for livestock waste management facilities were attempted.

Plan Recommendations

A. Database Development:

1. A stream monitoring program should be instituted on selected streams to measure the progress made on water quality improvements as BMPs are applied. (A research program was recommended to correlate water quality improvement with the application of BMPs to determine if the necessary water quality standards can be achieved with soil erosion control alone.)

2. Additional funding should be sought to accelerate soil surveys which are basic to establishing the BMPs.

3. An evaluation of all pesticides used in Illinois should be screened in the Metcalf laboratory model aquatic ecosystem to identify compounds with potential for persistence and biomagnification in the aquatic environment.

4. A biennial survey of pesticides used in Illinois agriculture should be conducted.

B. Information Transfer and Control Strategy Development:

1. The plan recommended that research and educational programs on soil erosion problems and soil erosion control methods be greatly expanded. All educational methods including mass media, television, radio, public meetings, demonstrations, and

universities, community colleges and high school curriculum should be used in a comprehensive program to bring the problems, solutions, and costs to the attention of land users and the public.

2. The Cooperative Extension Service should provide leadership for the educational program. All state and federal agencies with conservation interests should participate in the educational program. All appropriate local organizations such as SWCDs, conservation organizations, and farm organizations are expected to support and particpate in the educational program.

3. Approximately one-fourth of Illinois cropland soils should be tested annually to insure nutrient balance and avoid excessive application of fertilizers. Application techniques and rates recommended in the Illinois Agronomy Handbook should be encouraged.

4. A pest management program focusing on integrating pest control/crop production systems and educational programs to aid user implementation of the techniques should be initiated.

5. Educational materials on container recycling and disposal should be developed and distributed.

6. The Plan recommended soil loss reduction goals to achieve long term average annual soil loss tolerances recommended by the Soil Conservations Service (SCS). The Plan recommended the following target dates (contingent on sufficient funds and manpower becoming available):

   a) 1982 Goal - Reduce soil erosion losses until there is no land in the state with long term average annual soil erosion losses exceeding 50 tons per acre.

   b) 1983, 1984 and 1985 Goals - Reduce soil erosion losses until there is no land in the state with long-term average annual soil erosion losses exceeding 40, 30 and 20 tons per acre for years 1983, 1984 and 1985 respectively.

   c) 1988 Goal - Reduce soil erosion losses, until there is no land in the state with long-term average annual soil erosion losses exceeding 10 tons per acre.

   Cost sharing up to the 75% level is recommended to implement the application of BMP's to agricultural land with average annual soil erosion losses exceeding 10 tons per acre and a high priority will be given to land with average annual long-term soil erosion losses exceeding 10 tons per acre and adjoining land associated with the problem. Cost sharing monies may go toward correcting soil losses under 10 tons/acre/year if no land in the district concerned exceeds the 10 ton/acre/year rate. The work must be accomplished or committed prior to 1988 to qualify for the 75% cost-sharing rate.

d. 1990 Goal - Reduce the soil losses until there is no gently sloping land in the state with long-term average annual soil erosion losses exceeding the "T" values of 2-5 tons per acre. Gently sloping land is considered to be less than 4% slope where control can be achieved with conservation practices such as, but not limited to, conservation tillage and contour farming. Gently sloping land which cannot meet the "T" value without structural practices would fall under the 2000 goal.

e) 1995 Goal - Reduce soil erosion losses until there is no land in the state with long-term average annual soil losses exceeding 7 tons per acre.

f) 2000 Goal - Reduce soil erosion losses until there is no land in the state with long-term average annual soil erosion losses exceeding the soil loss tolerance established for maintaining soil productivity.

C. Placement and Management of Control Strategies:

1. The Plan recommended that the following Agencies be involved in implementation: Illinois Environmental Protection Agency, Illinois Department of Agriculture, Illinois Department of Conservation, University of Illinois Cooperative Extension, Agricultural Stabilization and Conservation Service, Soil Conservation Service, Farmers Home Administration, Agricultural Research Service, Illinois Pollution Control Board, United States Forest Service, Illinois Department of Public Health, Illinois Institute of Natural Resources, Small Business Administration, Soil and Water Conservation Districts, and State universities, community colleges and high schools.

2. The Illinois Department of Agriculture and the soil and water conservation districts were designated as management agencies for technical services and cost sharing and to direct the soil erosion control program. The Illinois Department of Agriculture in cooperation with the Illinois Cooperative Extension Service, was designated as the management agency for education. The Illinois Environmental Protection Agency and the Illinois

Pollution Control Board (PCB) were designated as managment agencies responsible for water quality monitoring and enforcement of the provisions of the water quality related elements of the soil erosion program.

3. The Plan directed the Illinois Department of Agriculture to adopt statewide soil erosion guidelines by November 1, 1979. It also recommended that amendments to the Soil and Water Conservation District Act be introduced. These amendments were for right of access to public and private property by soil and water conservation district personnel to offer technical assistance and investigate possible violations of the Act. It also provided for the transmittal of findings to the EPA.

4. The recommended erosion control program administered by the Department of Agriculture will be evaluated annually. At the end of a five-year initial period, a comprehensive evaluation of progress will be made. An annual report prepared by the Department of Agriculture will be one of the means for evaluating progress towards reducing water pollution resulting from agricultural sources of soil erosion. The annual report will cover research and education activities, progress towards meeting guidelines and standards, an updated summary of the Conservation Needs Inventory, and progress on program implementation.

5. The Plan recommended that the Agency develop and propose more specific water quality regulations for sediment pollution control to the Illinois PCB. These regulations would be enacted only if the voluntary programs under the Department of Agriculture and the Soil and Water Conservation Districts failed to make measurable progress towards reducing water quality impacts of soil erosion.

6. Modify cost-sharing guidelines. The $2500 limit per individual and per farm should be eliminated. Authority should be given to locally elected officials to establish such limits if they feel limits are needed. In many cases $2500 is not sufficient to provide a meaningful incentive.

7. Eliminate income tax on cost-sharing payments. This change could be accomplished by not requiring farmers receiving cost-sharing payments to declare funds received as income. This change would increase the value of the cost-share payment to operators and thus increase the chance that they would apply.

8. In addition to the income tax credits noted above, expenditures on BMP's should be eligible to be considered for an investment tax credit if it meets the general requirements set in the tax law. This is meant to insure that such deductions are not disallowed in the future.

9. The State should appropriate funds annually, contingent upon fiscal constraints and competing budget demands to provide cost sharing monies and additional technical assistance for implementing land treatment techniques to control soil erosion and runoff.

The funds are to be administered by the Department of Agriculture and soil and water conservation districts and allocated according to the following schedule:

Fiscal Year	Technical Assistance	Cost-Sharing
	($ in millions)	
1981	1.0	3.0
1982	1.5	4.0
1983	2.0	5.0
1984	2.5	6.0

10. Loans made for the purpose of implementing a SWCD-approved soil conservation plan should be guaranteed by the federal government. This will result in somewhat lower interest rates on such loans.

11. The State should provide a rebate of local real estate taxes paid on approved forest lands. This rebate would be repaid by the owner at the time of timber harvest. This would encourage the shift of land into forest, or the continuation of this use, and it would encourage the adoption of recommended management practices.

12. Under the Agricultural Conservation Program (ACP), BMPs must be maintained, without additional cost sharing, for a normal lifespan set for the practice. Cost sharing must be refunded on a prorated basis if the BMP is destroyed in its useful lifespan. If the land changes ownership, the cost-sharing recipient should enter into a written agreement with the new landowner, thereby transferring the responsibility to him.

13. The Plan recommended the development of a contractual leasing arrangement between an SWCD and a land user by which certain seriously eroding cropland is converted to a conservation use where permanent vegetative cover will protect it from erosion. This incentive was called purchase of cropping rights.

14. A non-salaried State Pesticide Monitoring Board be appointed by the Illinois Interagency Committee on Use of Pesticides to coordinate establishment and supervision of a State Pesticide Monitoring Program. The Board shall have a staff person assigned who is employed by the Illinois Institute of Natural Resources.

15. The proposed Pest Management Program will be initiated through the University of Illinois College of Agriculture, Cooperative Extension Service, Illinois Institute of Natural Resources, and the Agriculture Research Service, and Illinois Department of Agriculture.

16. The Plan recommended the following agencies as having implementation authorities under other agricultural non-point source areas:

    a) Field surveillance personnel to monitor feedlot compliance - Illinois Environmental Protection Agency.

    b) Project leader of the Pesticide Monitoring Board - Illinois Institute of Natural Resources.

    c) Pesticide monitoring - Illinois Environmental Protection Agency, Illinois Department of Conservation, Illinois Institute of Natural Resources, Illinois Department of Public Health, Illinois Department of Agriculture.

    d) Metcalf laboratory model - Illinois Institute of Natural Resources.

    e) Pesticide Use Survey - Illinois Institute of Natural Resources, Illinois Department of Agriculture, USDA Statistical Reporting Service, University of Illinois College of Agriculture, Illinois Environmental Protection Agency.

    f) Educational materials on container recycling and disposal - Illinois Environmental Protection Agency, Illinois Department of Agriculture, Illinois Cooperative Extension, Illinois Institute of Natural Resources.

g) Forestry program - Illinois Department of Conservation, Illinois Cooperative Extension.

h) Extension education - Illinois Cooperative Extension.

i) Educational curricula - State universities, community colleges, and high schools.

THE ILLINOIS EPA LIVESTOCK WASTE PROGRAM POLICIES AND PROCEDURES

Eric O. Ackerman, Agricultural Engineer
A.G. Taylor, Agriculture Advisor
Illinois Environmental Protection Agency

During the development of Illinois' Water Quality Management Plan, the Illinois Pollution Control Board was in the process of adopting Chapter 5: Livestock Waste Regulations. The Plan ultimately called for compliance with the regulations through a program of random investigation. Illinois EPA was designated the lead agency to administer the program.

The regulations required all livestock operations to be in compliance by June 30, 1979. Since that time Illinois EPA has maintained a staff of up to five Agricultural Specialists to survey livestock facilities and assist in solving problems related to livestock waste management. Currently only four Ag. Specialists are working on the program statewide. Additional support is provided by the Division of Water Pollution Control Permit Section and the Agency's agriculture advisor.

In the 2 1/2 year period through December 1981, nearly six hundred facilities have been surveyed. Sixty-four percent of these surveys were made in response to citizens' complaints and the remainder were conducted through Agency reconnaisance in concentrated animal producing areas.

Seventy percent of the facilities have had identifiable pollution problems or regulatory violations. The major problem has been open-feedlot runoff. The second most frequently noted problem was pit and lagoon overflows.

It is EPA's philosophy to work on a "worst case first" basis. The primary concern is with situations envolving water pollution. Follow-up on odor nuisances depends upon the problem's severity and available staff time and resources. Compliance should be pursued through voluntary actions of the livestock operator whenever possible. Litigation is used only as a last resort.

Experience over the last 2 1/2 years has shown a willingness of livestock operators to cooperate when a problem is identified. Compared to clean-up of municipal and industrial water pollution problems, the success in dealing with livestock waste pollution has been much more favorable percentage-wise and in time required for problem resolution.

Alternatives to voluntary compliance include requiring an operation to obtain an NPDES permit and litigation. Since July 1979, ten NPDES permits have been required and fifteen cases have been referred to enforcement out of the 600 facilities surveyed.

The principal objection to the livestock waste program relates to the way surveillance activities are conducted on a random basis. To restructure this the Agency plans to phase into a problem watershed oriented approach. With assistance from the Water Pollution Planning Section, stream segments and impoundments with water quality violations and use impairments will be identified. Livestock facilities in the contributing watersheds will be checked to assess their potential as pollution sources. Problem feedlots will subsequently be prioritized on a "worst first" basis for follow-up action.

The main impediment in gaining regulatory compliance has been financial constraint caused by the existing unfavorable economic conditions. Financial assistance for constructing livestock waste handling systems is provided on a very limited basis by ASCS. A state supported cost-share program has not been been developed and is not likely in the foreseeable future.

One potential source of financial relief is offered in the form of a reduction in real property tax evaluations. The Permit Section in the Division of Water Pollution Control certifies that various components of a waste handling system are functioning as pollution control devices. This may include holding ponds, settling basins, clean water diversions, etc. With concurrance from the Department of Revenue, assessed values for qualifying components are deferred from the operator's total property tax assessment.

In an effort to offer a low cost alternative to compliance, the Agency has proposed design and maintenance criteria for use of vegetative filter systems to treat runoff from livestock confinement facilities.

Interest in vegetative filters was generated in the early seventies when University of Illinois and Southern Illinois University researchers established experimental systems to determine sizing and design specifications required for their use under Illinois conditions. More recently, the Soil Conservation Service has designed filters in the Blue Creek and Highland Silver watersheds.

The primary components of a vegetative filter system are a settling basin and properly sized and sloped vegetated area which work in combination to remove sediment, organic matter and other pollutants from feedlot runoff. Solid materials settle out in the basin. Liquid wastes filter through and are uniformly distributed over the vegetated plot for treatment through infiltration, adsorption, absorption, and assimilation.

Vegetative filters may be most advantageous to small producers as they offer an alternative to the conventional holding pond or lagoon systems. Savings of 25 to 50 percent on installation costs can be realized.

Settling basin design, filter sizing, and procedures for establishing vegetation are some of the provisions in the proposed standards. Also included are maintenance requirements to ensure proper functioning of the systems.

In accordance with the Illinois Administrative Procedures Act, a text of the proposed criteria has been published in the Illinois Register and subjected to a 45-day public comment period. Following a review by the Joint Committee on Administrative Rules, the criteria will be adopted as part of the Illinois Livestock Waste Regulations. Adoption is anticipated by mid-June.

The Water Quality Management Plan estimates over 17,000 feedlots in the state will require some type of runoff control to comply with the regulations. With the limited resources available to defray compliance costs and a field staff of only four trained Agricultural Specialists, the Agency views total implementation as an overwhelming task which can only be realized through cooperation with livestock operators, producer organizations, and other agencies. IEPA welcomes input and suggestions from these groups in a constructive and positive effort to achieve desired goals outlined in the Plan.

PROGRESS IN IMPLEMENTING THE RECOMMENDED BMP'S
FOR
LIVESTOCK WASTE MANAGEMENT

Dale H. Vanderholm
Assistant Director, Illinois Agricultural Experiment Station
Former Chairman, Livestock Waste Subcommittee
Agricultural Task Force on Non-Point Sources of Pollution

In its problem assessment, the livestock waste subcommittee of the Task Force on Agriculture Non-Point Sources of Pollution indicated that the principle concern in livestock production as related to water quality was the uncontrolled runoff from open feedlots. These feedlots of concern are mostly small to medium in size and are scattered throughout the state. Almost all large feedlots have installed runoff control systems or are using confinement facilities which have no direct runoff or other discharge. Of an estimated 58,000 feedlots in Illinois at the time of the final Task Force report, it was estimated that 4,600 beef, 1,300 dairy, and 10,200 swine feed lots were in need of runoff controls. The degree of pollution hazard and the nature and extent of controls needed varied considerably between feed lots, of course.

Livestock on pasture were not considered a problem except in the case of extreme mismanagement. The other main area of discussion, land application of manure, was judged to be a beneficial practice and not hazardous to water quality when proper management practices are followed.

To deal with the identified problem situations, recommended best management practices (BMP's) were developed and included in the Task Force report. These were divided into three main categories: management of the facility where manure is produced, management of manure storage and/or treatment components, and management of the ultimate waste disposal, which is most commonly by land application. The basic objective of the specific BMP's was to prevent uncontrolled, untreated runoff as well as other forms of direct discharge of livestock waste from occurring and from causing water pollution.

A significant factor affecting the implementation of the recommended BMP's was that state livestock waste regulations, which had been under development for several years, were placed in effect at nearly the same time as the final report was issued. The state regulations were actually used as a basis for some of the BMP's, a logical approach since the regulations had been under development for some time with similar objectives to those in the Task Force report. Obviously, any conflict between BMP's recommended by the Task Force and the state livestock waste regulations would have created an impossible situation.

Enforcement of the regulations is the responsibility of the Illinois Environmental Protection Agency and it is obvious that any enforcement activiities following the adoption of the final Task Force report would have hastened the implementation of the recommended BMP's. More specific information on the type of enforcement activities during this period and their effect is contained in another paper on that topic, authored by Illinois EPA staff and also included in this publication.

Traditional zero discharge runoff control systems have been improved by research conducted during the past few years and new methods for control have also been developed during that period. An example of new technology has been the development of the vegetative filter, a discharging runoff treatment system which tends to be lower in cost and in management requirements than the more traditional zero discharge systems. Research on vegetative filters conducted by the University of Illinois at Urbana-Champaign and by Southern Illinois University, Carbondale, has proved this to be a feasible method for many Illinois feedlots. Better, lower cost runoff control techniques such as this will be beneficial speeding the progress of BMP implementation.

As with other non-point source areas, there has been a major educational program to acquaint people with the recommended BMP's and to encourage voluntary adoption. The Illinois Cooperative Extension service has had an extension program dealing specifically with this area. It is a broad, extensive program including assistance with individual facilities, conducting county, local, and state meetings, using mass media techniques involving magazines, newspapers, radio, television, etc., as well as other methods. In the years 1979, 1980, and 1981, there were approximately 135 extension programs which dealt with good livestock waste management techniques given in the state by extension agricultural engineering specialists. Approximately 6,000 livestock producers attended the programs and were introduced to recommended BMP's. In addition to the extension educational activities, many other organizations conducted either independent or cooperative activities. Farm organizations, Illinois EPA, and other groups had educational efforts aimed at voluntary compliance with the regulations and at adoption of BMP's.

Individual planning assistance for livestock waste management facility is provided by the Cooperative Extension Service, the Soil Conservation Service, private consultants, and others. Although the numbers of individual facilities that are provided assistance of this type are not great, many of these facilities serve as local demonstration projects so that a larger number of neighboring livestock producers are acquainted with the configuration and principles of good management techniques.

Another incentive for installation of recommended BMP's has been the availability of cost sharing for construction of approved facilities through the Agricultural Stabilization and Conservation Service. During the years, 1979, 1980, and 1981, a total of 64 farms in Illinois received some cost sharing for the construction of waste management facilities. While this number is not large relative to the total number of problem situations existing, it also has a far reaching effect, since many of the cost shared facilities serve as local demonstration facilities, similar to those mentioned in the previous paragraph.

During the years 1979, 1980, and 1981, various sectors of the livestock industry have been faced with extremely poor livestock prices and generally poor economic conditions. One side effect to this is that many producers are not in good financial condition to spend money on implementing BMP's which will not provide any individual financial return. This, of course, has a negative effect on BMP implementation. Another facet however, is that many producers, for economic or other reasons, have gone out of the livestock business during that period of time. Table 1 gives the estimated numbers of beef, swine, and dairy facilities in the state in 1981 and in 1978, based on the figures provided by the US Department of Agriculture Crop Reporting Board. As can be seen from the table, many of the operations ceasing business were in the smaller size categories, and many of these were unlikely to have any form of runoff controls, although it's likely that controls were needed in many instances. From this we can conclude that there are fewer operations in the state which now require runoff controls than the number estimated at the time the Task Force report was issued. This maybe cannot be construed as progress in implementing the BMP's, but apparently there are a number of operations which were potential polluters which have ceased to exist.

There has been no unified reporting of installation of runoff control facilities or of adoption of many other livestock waste BMP's during the period being discussed. The Illinois EPA, the Soil Conservation Service, Cooperative Extension Service, and others involved in direct contact with individual facilities have records of those where BMP's were implemented. However, it's very obvious to persons working closely with this area that far more runoff control systems have been installed or BMP's implemented than are documented through any of these methods. Many farmers have installed runoff control systems due to their own environmental concerns, their desire to be in compliance with the state regulations, and due to other motives and reasons. Due to economic conditions mentioned previously, construction of new facilities has slowed in the last few years. Most new facilities built in that period, however, use recommended BMP's and are in compliance with the regulations.

While nearly impossible to enumerate, it seems apparent that the number of facilities where BMP's have been implemented are far greater than those documented through the means described. Progress has undoubtedly been made in this area. This should not only result in a reduction of complaints to environmental authorities, but also in fewer documented instances of pollution. There are also many situations which remain where additional steps are needed to control runoff or other BMP's should be implemented. A favorable economic climate for livestock producers would be extremely beneficial to encourage voluntary action. BMP implementation usually costs money and financial returns to the producer resulting from implementation are minimal. With the absence of a major regulatory enforcement program, the voluntary adoption of BMP's and voluntary compliance with the regulations will still have to be the primary implementation method. Reasonable progress has been made to date and will continue to as management practices and economic conditions are improved.

TABLE 1

NUMBERS OF LIVESTOCK OPERATIONS IN ILLINOIS, 1978 and 1981

	Number of Operations		
	1978	1981	Decrease (Increase)
Hogs			
Operations with inventory of			
1-99 head	17,160	13,916	3,244
100-499	11,880	10,416	1,464
500+	3,960	3,668	292
TOTAL	33,000	28,000	5,000
Beef Cattle (feedlots)			
Operations with inventory of			
under 1,000	13,925	11,920	2,005
1,000-1,999	60	60	--
2,000-3,999	15	20	(5)
TOTAL	14,000	12,000	2,000
Dairy			
Operations with inventory of			
1-29	4,160	2,852	1,308
30-49	1,920	1,488	432
50-99	1,640	1,488	152
over 100	280	372	(92)
TOTAL	8,000	6,200	1,800

Sources: Hogs - Hog and Pigs, Crop Reporting Board, USDA, 12/78 and 12/81 Beef Cattle - Cattle on Feed, Crop Reporting Board, USDA, 1/79 and 1/82 Dairy - Cattle Crop Reporting Board, USDA, 1/80 and 1/81

RESPONSE OF LIVESTOCK PRODUCERS TO WASTE REGULATION ENFORCEMENT

John Killam, Legislative Director
Illinois Livestock Association

The inquiry of livestock producers to the Illinois Livestock Association prior to 1980 was "What will I have to do and where can I find financial and technical help to comply with the rules and regulations?"

Today these are some of the comments of producers that have had recent contact with the Environmental Protection Agency.

"I am not making any money in the livestock operation."

"I am having problems borrowing enough money now to keep my farm operation going."

"These high interest rates are killing me."

"If I have to spend a substantial amount of money now, I will have to discontinue my livestock operation."

The acceptance by producers of the vegetative filter concept for livestock waste pollution control appears at this time to be the only method that small livestock operations can afford.

DEVELOPMENT OF AN INTEGRATED PEST MANAGEMENT PROGRAM IN ILLINOIS

William H. Luckmann
Illinois Natural History Survey
and
College of Agriculture
University of Illinois

The Subcommittee on Pesticides, 208 Agriculture Task Force on Non-Point Sources of Pollution, among it recommendations, urged that the State of Illinois appropriate $960,000 to support integrated post management (IPM) research in Illinois. To date, no action has been taken by the State on that recommendation, though a proposal for a lesser amount of dollars has been submitted to the Illinois Department of Energy and Natural Resources. IPM is moving in Illinois in large part due to appropriations from USDA/Science and Education/Extension Service and a multi-state USEPA/USDA grant (16 states are involved in this research project) for IPM research on apple, alfalfa, cotton, and soybeans.

A nation, a state, or even a county cannot leap from a quarter of a century of overcommitment to preventive pest-control practices into as complex a professional endeavor as pest management. Clearly there must be a period of transition, perhaps from 5 to as much as 25 years or more, during which professional, educational, and extension philosophies are applied, new tools readied, economic and social benefits/costs tallied, and management strategies refined. However, given the present awareness of the crises in some major pest-control programs and the concern about environmental quality, a start must be made, and the present is none too soon.

Much research is needed, but significant progress is being made and an important change in philosophy is occurring. It is now obvious that IPM cannot stand alone. It must be integrated with crop production. Terms such as integrated crop protection and crop protection/crop production are being used by protection specialists, and rightly so, since insect control and crop production must be meshed to achieve pest management. By integrating crop production with crop protection we can avoid some pests and lessen the destructive impact of others. We can identify this or that production practice that may intensify a pest problem and make control more difficult. We have been slow to include crop production researchers and extension specialists in IPM programs, but their involvement is essential in developing options and alternative strategies for successful pest management.

In IPM the tensions that are inherent in attempts to achieve both economic and environmental objectives imply a need for substantial expansion of dollars for public research. Lack of knowledge remains a serious constraint in the development and adoption of IPM technologies. The value of the computer, the systems analyst, and the multi-disciplinary team approach to IPM is now very obvious.

Despite the fact that much more research is needed, significant progress is being made toward IPM goals, The Cooperative Extension Service, College of Agriculture, University of Illinois, has implemented a Crop Production Workshop for the training of pest management consultants and pest scouts. In 1981, there were 25 firms employing 35 professional consultants and approximately 150 seasonal employees. These professionals are serving approximately 1,500 farmer/customers in all counties in Illinois by providing consultation and pest scouting for a fee. This is a significant achievement in that 8 years ago, there were no pest management consultants in Illinois.

Research continues to provide new knowledge in the development of IPM programs and Illinois has programs underway in apple, soybeans, horseradish, corn and alfalfa. These programs will be discussed briefly in this seminar. A significant new approach is the pilot testing of pest event simulators and pest simulation was used to alert growers about the black cutworm in 1980 and 1981. Much more needs to be done with computers in the seasonal simulation of pest and crop development. The progress we have made in Illinois is impressive, but in reality, we have just begun to explore the possibilities for Integrated Pest Management in Illinois.

REPORT ON FARM BUREAU YOUNG FARMERS PESTICIDE CAN RECYCLING DRIVES OVER THE YEARS

Jim Mergen, Assistant Director
Illinois Farm Bureau
Department of Natural and Environmental Resources

Illinois Farm Bureau Young Farmer Committees, voluntary groups of young farmers associated with Farm Bureau throughout Illinois, have been organizing to deal with the problem of proper disposal of agricultural chemical cans since 1979. These cans, which all farmers generate through their agricultural activities, have long been considered a potential source of pollution if improperly disposed.

Initially, Young Farmers Committees in four counties felt complelled to do something about this problem. They organized and conducted can recycling drives collecting a total of 44,000 cans in 1979. The program was expanded in 1980 to include 26 counties across the state, resulting in the recycling of over 130,000 five-gallon chemical cans. This represented 10% of the million and a half five-gallon chemical cans sold in Illinois that year. That same year, a grant from the Department of Energy and Natural Resources was initiated to construct an efficient can crushing machine to ease the disposal problem.

Twenty-five can drives were conducted in 1981, recycling approximately 100,000 metal cans. This represented roughly 13% of the total can production in Illinois that year. Interestingly, the number of chemical cans sold in Illinois in 1981 diminished to 750,000 cans from the previous 1.5 million in 1980. Increased bulk handling of chemicals and the repackaging of these products into more environmentally acceptable containers accounted for the decline. Young Farmers can take a great deal of credit for this improving situation and for a greater awareness in the farming community of the chemical container problem.

Young Farmers' efforts have been quite effective in solving the can problem when one considers that approximately 40% of all cans are sold to commercial applicators who, by state and federal regulations, must properly dispose of their own chemical cans. Also, various cooperatives and county governments provide can disposal systems to farmers, alleviating the need for can drives in many areas of the state.

We expect, for 1982, about the same number of counties will organize can drives. We also foresee a further reduction in the total number of metal five-gallon cans sold in the state. We are building another mobile can crusher with grant funds to operate in the southern part of the state, thus facilitating the expansion of this program in southern Illinois.

Personal safety has been the watchword for our recycling program since its start. With the expansion of the program has come an emphasis on the proper rinsing of cans and the safe operation of can drives. We have found that as Young Farmers become involved in this program, they begin to consider alternatives to five-gallon chemical cans. Many convert to bulk systems and adapt their pesticide application systems to eliminate personal exposure and to guarantee complete use of all their chemical.

We consider this cooperative, voluntary effort by Farm Bureau Young Farmers, the Department of Energy and Natural Resources, the Illinois Environmental Protection Agency and farmers who bring their cans to recycling drives an excellent example of how people can, at a relatively small cost to government, resolve important environmental and social problems. A total of $1,349 was spent from state grant funds to facilitate every aspect of the can recycling program for 1981, resulting in over 100,000 recycled cans. The total cost to the state for the program comes out to a little over a penny a can.

Farm Bureau plans to make this program self-supporting after the current grant funds are expended. We will use the funds derived from the sale of scrap metal cans to cover the expenses of the can drives and repair of the can crushers.

It's difficult to gage the amount of pride and hard work these young farmers put into making this program a success. The hours and resources put into building can crushers, advertising this program, and recycling the cans is difficult to calculate. I'm very proud to have been associated with their efforts, and I look forward to being involved with these Young Farmers again next year.

PESTICIDE USE
AND
PERSISTENT WATER QUALITY PROBLEMS

A.G. Taylor, Agriculture Advisor
Illinois Environmental Protection Agency

Three areas of concern regarding pesticide use were identified in the Water Quality Management Plan. These were peticide container disposal, management of waste pesticide rinsates, and non-point runoff of applied chemicals.

The container disposal quandary has been addressed from several perspectives. Many chemicals are now being packaged in burnable plastic and paper containers in place of the conventional five-gallon cans. Bulk handling systems are becoming more prominent on large farms and custom facilities. These systems utilize larger containers, 55 gallons up to several thousand gallons, for storage and transport. As a result, estimates indicate a 50% reduction in the number of 5-gallon cans used. Approximately 750,000 "empties" are now being generated each year in Illinois.

Ongoing container recycling projects and educational programs help to minimize container related water quality problems. Safe disposal is stressed in Extension meetings and publications. The Illinois Farm Bureau has successfully conducted can recycling projects the past four years in over 25 counties. These projects, partially supported by the Department of Energy and Natural Resources, account for 1/6 of the "empties" generated.

Although the container problem appears to be subsiding, these efforts should be continued. Still, with another 50% decrease in cans used, nearly 400,000 would require proper disposal each year.

Pesticide rinsates perpetually cause problems for custom applicators. Complaints of waste runoff from commercial facilities have continued to increase.

An acute awareness of the situation is now instilled among the operators prompting actions to develop innovative waste management techniques. A task force organized two years ago by IEPA, the Department of Agriculture and industry representatives is writing a reference manual of recommendations for managing pesticide wastes.

The guidebook is scheduled for completion this summer. It will emphasize volume reduction techniques which minimize the amount of waste produced. Most disposal and treatment alternatives have been complicated by the onset of hazardous waste regulations.

Research to develop implementable treatment systems is in progress. An experimental evaporation basin in operation at the University of Illinois and a trickling filter system being tested at Southern Illinois University may prove to be options for the more progressive operators.

The control of non-point runoff of applied chemicals necessitates a much less favorable report. Recommendations in the Plan to address this issue included:

> A non-salaried State Pesticide Monitoring Board be appointed by the Illinois Interagency Committee on Use of Pesticides to coordinate establishment and supervision of a State Pesticide Monitoring Program. The Board should have a staff person assigned who is employed by the Illiois Institute of Natural Resources. Activities under his supervision would include:
>
> - Systematic monitoring for pesticides in water, sediment, and in fish and other appropriate indicator organisms to detect seasonal and/or annual levels of pesticide residues in the aquatic environment in Illinois.
> - Evaluation of all pesticides used in Illinois in the Metcalf Laboratory Model Aquatic Ecosystem or by another reliable procedure to identify those compounds with potential for persistence and biomagnification in the aquatic environment.
> - Biennial survey of Illinois pesticide use in agriculture.
> - Economic analysis of the impact on Illinois agriculture, on the environment, and on the health and welfare of Illinois citizens whenever state regulation is proposed that would prohibit or restrict the major use of a specific pesticide in Illinois.

Little has been accomplished in implementing these recommendations. As a result, meaningful evaluation of persisting water quality problems is lacking.

Chlorinated hydrocarbons, despite their discontinued use, are still being detected in sediment and fish flesh samples. As predicted, the disappearance of these chemicals may not be realized for a number of years.

With the transition to less persistent but more toxic organophosphates and carbamates, a higher potential for fish kill incidents was anticipated; however, if the record number of fish kills in 1981 (73+) reportedly caused by pesticide runoff indicates the magnitude of the increase, an inherent environmental crisis exists. It was assumed that the greater short term risk of toxicity would be minimized by more prudent use and careful evaluation of effects. These events clearly signify a need of responsible actions for mitigation on the part of chemical manufacturers, regulatory agencies, researchers, and pesticide users.

Organphosphates and carbamate pesticides have not been extensively monitored; therefore, little data are available on residues in organsms, water and sediment for these compounds. It has been inferred to this point that by possessing less persistent characteristics these chemicals would be less damaging to the environment; however, it is evident the total and long term environmental consequences are not known.

The coordinated monitoring and evaluation program recommended in the Plan, intended to answer such questions, has not been instituted by the Interagency Committee on Pesticide Use. There is a need to see this through. Adjustment of ongoing monitoring programs will be required to test for chemicals now in use and assess their environmental effects. Pesticide use surveys should be utilized to indicate significant use patterns and which products are most important to agricultural production. Simultaneous benefit/risk analyses could be run when necessary to determine acceptable threshhold levels of exposure.

A recent report published by ENR outlines the Metcalf procedure of screening pesticides for possible adverse environmental effects. Its potential as a tool in the decision making process has yet to be examined. The Model Ecosystem could provide definitive information when use conditions or restrictions are proposed.

Also called for is research to develop management practices that prohibit movement of pesticides from the site of application, and additional support for the development of an integrated pest management program to ensure more discriminatory use of pesticides reducing the potential for undesirable chemical contamination and residue accumulation.

The runoff events experienced in 1981 were presumably due to an unusual combination of circumstances, and a reoccurrence is considered unlikely; however, IEPA is viewing the situation with extreme caution. More intensive monitoring and evaluation are apparent needs. The Agency intends to work aggressively to determine the significance of these problems and deficiencies and develop plans of action as warranted.

ISSUES RELATING TO FERTILIZER USE AND PLANT NUTRIENTS

A. G. Taylor, Agriculture Advisor
Illinois Environmental Protection Agency

The most conspicuous problem associated with fertilizer use is not addressed in the Water Quality Management Plan. IEPA records indicate over 50 transport accidents and spills involving fertilizers have been investigated by the Emergency Response Unit since January, 1980. Since these incidents tend not to be related to field management practices, they were not considered in the non-point run-off control strategies.

Primary causes of the incidents are broken hoses on nurse tanks, corroded valves on storage tanks, truck accidents, train derailments, and pipeline leaks. Consequences include clean-up costs, loss of product, water quality degradation, and fish kills valued as high as $8,000. It appears that many could be prevented by implementing better management techniques.

The Agency will be making a more thorough review of these problems by mid-summer. A problem solving approach involving an advisory group to develop and promote effective operational practices is being considered.

Several public water supplies in central Illinois continue to experience high nitrate excursions. Cities recently affected include Georgetown, Paris, Decatur, Pontiac, Bloomington, and Streator.

Historical patterns dating back to the early 1900's show increased nitrate levels typically associated with runoff from the springtime rains. Concentrations reported are higher today due to man's activities. Influencing factors include increased tilled acreages releasing nitrogen from oganic matter, a greater number of municipal and domestic waste sources, conversion to more confined livestock operations, and increased fertilizer use.

The degree fertilizers contribute to high nitrate concentrations is unknown and likely won't be known without extensive and costly research and monitoring. Experiments on fertilizer use efficiency show uptake of applied nitrogen by a growing crop to range for 20% to 80%, depending upon application timing and procedures, and weather conditions during the growing season. Obviously, farmers can only control their management practices; therefore, continued research efforts and implementation of the most efficient fertilizing techniques are recommended.

The severity or risk of the high nitrate problem applies primarily to infants up to six months of age subject to developing methamoglobinemia.

With the small population affected by the excursions in Illinois, the consumption warning system instituted by the Agency is considered adequate and the most logical preventive approach for sources regulated by IEPA. Periodic water sampling and testing is recommended for the safety of those utilizing smaller private water supplies.

Potentially, nitrogen sources are coming under better control. Municipal waste treatment facilities are being constructed and upgraded. Livestock wastes, by regulation, must be contained to prevent discharges into waters of the state. Better fertilizer management is being fostered by rising fertilizer costs, and organic matter sources should stabilize as acreages available for increased row crop production become limited. These factors combined may possibly result in a leveling-off of nitrate concentrations, which should be indicated by continued monitoring programs.

Phosphorous loadings from agricultural sources are run-off related. Soil testing and following accepted agronomic guidelines conceivably minimize fertilizer related nutrient problems, but the true effects of these practices will not be known until run-off controls are in place. This reinforces the need for implemlenting the Plan's soil erosion program.

ADDRESSING WATER QUALITY IN DEVELOPING THE ILLINOIS FOREST AND RELATED RESOURCE PLAN

Dick R. Little, Section Manager
Division of Forest Resources & Natural Heritage
Department of Conservation

The Illinois Department of Conservation, Division of Forest Resources and Natural Heritage has initiated the development of the Illinois Forest and Related Resource Plan. This planning effort began in late summer of 1980 and is scheduled to be completed in September of 1983. This plan is to be comprehensive in nature and will consider all forest resources and their interrelation on all forest lands, regardless of ownership. It is being developed using an issue driven, systematic planning process and includes public involvement activities. Such plans as the Illinois Water Quality Management Plan, State Comprehensive Outdoor Recreation Plan (SCORP), Shawnee Forest Plan, RPA, RCA, State Soil and Water Plan, the Illinois Natural Areas Plan and the State Fish and Wildlife Plan will be utilized by us in the development of this Plan, as well as other plans or activities that have an effect on Illinois' forest resources. In 1980, we reorganized the Sate Forestry Planning Committee and doubled its original size. In addition, we organized five Volunteer Regional Citizen Advisory Committees and formed a Department Planning Task Forces Committee. All of these committees provide input on a continuous basis throughout the development of the statewide plan.

In August, 1980, we surveyed the public on the issues by using a five-question questionnaire. As a result of this input, as well as from our committees, we developed eleven major concerns that affect the forest and related resources. These concerns are:

1. Increased economic and social influences are causing forest lands to be converted to other uses.

2. There is a need for genetically superior seed sources and to expand and accelerate conservation planting programs.

3. The majority of private and public lands are not attaining their full potential from forest management practices.

4. A continuing effort is needed to protect and preserve Illinois' native ecological communities, especially those flora and fauna that are endangered or threatened.

5. Poor land management practices and competition for the land are destroying or degrading fish and wildlife habitat.

6. Recreational opportunities on public and private forest lands are not being fully realized.

7. The lack of public awareness and education regarding conservation and natural resource management practices is adversely affecting Illinois' natural resource base.

8. Increased efforts are needed to protect forests and associated lands from fire, insects, disease, erosion, pollution and human abuses.

9. The benefits of urban forest management are not being realized.

10. Improved harvesting practices, market development and greater utilization are necessary if Illinois is to realize the full economic potential of its forest resources.

11. The re-emergence of wood as a fuel has placed an additional unknown demand on the forest resources that can, without proper controls, diminish the available and future timber supply as well as decrease the resource-base acreage.

Summer of 1982, we distributed a second questionnaire which was considerably longer and more involved than our first one. Of the 4000 questionnaires distributed statewide, 1050 were returned, representing a 26 percent response rate. Of these, 1050 returned, 33% owned or operated 5 or more acres of Illinois land.

As it related to water quality (Section 208), the questionnaire had the following questions and responses.

Question 12 - Buffer (protective) strips of forestland should be left along permanent streams when timber is being harvested to protect fish and wildlife habitat - 75% strongly agreed; 19% agreed; 3% disagree; 1% strongly disagreed and 2% don't know.

Question 26 - A buffer (protective) zone of forest cover should be maintained along streams where row crops have encroached upon the stream bank - 65% strongly agreed; 29% agreed; 2% disagreed; 1% strongly disagreed; and 3% didn't know.

Question 39 - Do you think that timber harvesting activities on public and private forestland in Illinois cause significant problems with soil erosion and pollution of lakes and streams? 59% said yes; 18% said no and 22% didn't know.

Question 40 - If Yes to the previous question, which of the following methods of dealing with this problem do you prefer?

25% said - voluntary use of soil and water conservation practices during and after timber harvesting operations by loggers and forest landowners.

48% said - provide financial incentives to encourage use of soil and water conservation practices during and after timber harvesting operations.

69% said - enact a law that requires use of soil and water conservation practices during and after timber harvesting operations by loggers and forest landowners.

7% - Other

The major concensus is that there should be some kind of controls to increase water quality. Now the real question: is there an erosion problem or is it the belief of the public that there is an erosion problem in Illinois? The Water Quality Management Plan states that the problem is only during the initial harvesting and not a prolonged threat. Based on the T-Value, non managed or mismanagement of the forestland is the real problem. Therefore, the problem still remains as an educational one.

We also provided a Remarks Section in the questionnaire. This was very interesting and helpful. One individual made the following comment:

> "Too much timber land is being cleared. Too much soil erosion to our lakes and rivers. Soil bank programs were responsible for much timer land clearing; a rip-off to the general tax payers!"

Another stated:

> "In my area, we are losing fence rows and ditch bank tree lines being cleared for the sake of a few rows of corn. Wind erosion is bad now; will be worse in years ahead."

The above quotes are to illustrate the concerns and support that the public has with the problem we are addressing here today. They are concerned about the problem and want some type of assistance towards the reduction of erosion.

The Water Quality Management Plan listed additional areas that data are needed to help address several questions. Unfortunately, these questions still exist. The Best Management Practices (BMP's) developed and the assessments that addresses the 208 questions have been and will be most useful in preparing our comprehensive plan. The Water Quality Plan addresses in one form or another all the concerns in our Plan. Therefore, the two plans must be and will be intergrated together.

As far as initiation of the 208 plan, we have implemented portions of it through our technical assistance programs.

These programs contact on the average of 11,000 landowners annually and write 1400 Management Plans and advise on 13 Management Plans for approximately 66,000 acres/year. Our efforts will continue in the implementing of good forest management practices.

ILLINOIS FARM BUREAU's SPECIAL PROJECTS FOR CONSERVATION EDUCATION

Jon Scholl, Director
Illinois Farm Bureau
Department of Natural and Environmental Resources

It has long been the feeling of the Illinois Farm Bureau that if farmers recognize a problem and have the tools to solve it they are quite capable and quick to meet challenges before them. This philosophy was evident as we looked at the soil erosion problem. It could be solved voluntarily once awareness of the problem was found and tools for solving it were provided and understood. Response to the varied programs we have provided over the past three years seems to support this idea as we are seeing a significant change to a greater conservation awareness amongst farmers.

There were three key goals which we sought to accomplish in our conservation education program.

1. Make members aware of the soil erosion problem.
2. Provide information on how to control soil erosion-- preferably by using other farmers as examples.
3. Create an understanding of soil erosion with non-agricultural people and tell them what farmers are doing to solve the problem.

The foundation of the Illinois Farm Bureau's conservation education program is a promotional campaign designed to create awareness of soil erosion and to spur action to control it. The content of this promotional campaign is varied. We have utilized print materials, radio and TV, special meetings, a special mailing and other means to create a greater sense of urgency to control erosion.

Two special inserts for our weekly newspaper FarmWeek were printed. FarmWeek has a circulation of 110,000 copies per week and 5,000 extra copies were printed to fulfill individual requests for use as an education tool. A brochure was developed to better inform our membership of what the Illinois Department of Agriculture's Soil Erosion & Sediment Control Program is intended to accomplish. Another brochure was developed to convey basic factual information about the condition of our soil resource.

The Illinois Farm Bureau has a well developed television and radio capability allowing us to reach many farm and non-farm people. A television public service announcement, also dubbed for radio, was developed to help people to consider the value of our soil and the need for its conservation. Documentaries and brief news stories have been developed over the past several years, making conservation a regular topic on television and radio farm broadcasts. Another project which was done via television, designed to help our members understand more clearly some of the more controversial policy aspects of the soil erosion problem, was the development of a round table discussion on soil

conservation. Three farmers, two environmentalists, and an urban legislator were invited to discuss their perceptions of the soil erosion problem on camera. The result of this effort was a 29-minute video tape suitable for a variety of audiences showing very clearly the differences in the approach for solving the soil erosion problem and the logic behind those feelings.

One of the key tools for measuring soil erosion is the universal soil loss equation. We felt the greater the understanding of this tool farmers had, the better chance we would have of getting them to recognize soil erosion and the means to control it. We developed a program where we could meet with small groups of farmers to teach them how to use the equation. To date, roughly 22 counties have participated in this program. Strong emphasis has been placed upon giving farmers actual hands-on experience with the use of the equation. Roughly 1/2-hour is spent going over the five factors of the equation in a classroom style followed by an hour and a half of actual field application. It has been very interesting to watch the reaction of individuals as they plug different factors into the equation and actually see what those changes can mean to soil conservation.

Meetings are an important part of the Illinois Farm Bureau educational effort. We have held special meetings on soil conservation in many counties, usually at a county's request. We have also held special meetings with other farm groups to discuss what role independent organizations can play in the successful implementation of a voluntary soil conservation program. Each winter, we conduct a series of regional meetings for our leadership to bring them up-to-date on issues with which they are concerned. Soil erosion continues to play a major role in those meetings. They have proven a valuable tool in keeping our leaders current on the direction erosion controls are taking in Illinois. Another kind of meeting sponsored was a soil conservation and land use seminar for our board of directors and tentative resolutions committee. In the Fall of 1981, 45 of our top state and county leaders spent two days developing a better understanding of what the soil erosion problem is and how our organization can best help to deal with it.

One of our major areas of emphasis has been to continue to communicate on a regular basis with our county organizations and our affiliated companies. The plans for the upcoming year of our promotional campaign focus specifically on providing more materials and information to county Farm Bureaus so they can do a more effective and comprehensive job in providing information on conservation through their local newspapers and media outlets. The feeling is strong amongst Farm Bureau that the more people we can get talking about soil conservation, the greater the chance we'll have of seeing an actual change in the way the land is being farmed.

The payoff of this effort has been evident. As I look back to the days I first became involved with this subject, roughly three years ago, the level of understanding of the problem was low. If you mentioned the universal soil loss equation, few people understood what you were talking about. If you mentioned "T" values or soil losses, confusion quite often was expressed on people's faces. As we now talk to farmers, they understand exactly where you are when you mention the USLE or "T" values. A drive through the countryside will show that change is taking place. This change is obvious and it should mean a lot to the statewide effort to control soil erosion.

STATE AGENCY INVOLVEMENT
IN
VOCATIONAL AGRICULTURE CURRICULUM DEVELOPMENT
AND
DEMONSTRATION PROJECTS ON CONSERVATION TILLAGE

Randy Grove, Regional Coordinator
Illinois Department of Agriculture
Division of Natural Resources

Education plays a vital role in accomplishing those responsibilities of state agencies involved. One means of assuring agencies' cooperation and participation was to create the Curriculum Development Advisory Committee to the Illinois EPA.

The committee was organized and chaired by the Illinois EPA in 1979. The purpose of this committee is to oversee the production and distribution of educational units on agricultural non-point pollution problems for use at the secondary level. Committee members include the Illinois Department of Agriculture; Southern Illinois University, Agricultural Education Department; University of Illinois, Vocational Agricultural Services; Lake Land College; Department of Energy and Natural Resources; and the Illinois Environmental Protection Agency.

The committee's work has resulted in three units being developed providing agricultural pollution and safety information to vocational agricultural teachers and others concerned with agriculture and the environment. To date, the three teaching modules developed were on the subjects and titles of: Livestock Waste Management; Pesticide Use and Water Quality; and Fertilizer Use and Water Quality. Each module included a booklet, 80 slides per set, script, and approximately 18 minutes of cassette tapes, with the addition of an 80-frame film strip for the Fertilizer Use and Water Quality module.

The three units were drafted by the Southern Illinois University Agricultural Education Department. The University of Illinois, Vocational Agricultural Services, produced the final package of material for the Livestock Waste Management unit for distribution. The remaining 2 units' completed packages were produced by the Southern Illinois University, Agricultural Education Department, for distribution. The Livestock Waste Management module was distributed to all Illinois secondary schools and community colleges with agricultural programs. Responses received from high school agriculture teachers and community college instructors were encouraging as to the worthiness and value of the modules, and often requests followed for additional materials. Funding for the development of these modules was administered through the commitment of the Department of Energy and Natural Resources. The Illinois Department of Agriculture provided funding to apply towards distribution of the Livestock Waste Unit. Currently, distribution methods for the pesticide and fertilizer units are being planned.

A special project has been initiated and funded by the Illinois Department of Agriculture to develop a basic soil erosion - conservation unit. The unit will follow a similar format as previous units. This unit is being produced by Vocational Agricultural Services, University of Illinois, for the Illinois Department of Agriculture. Components of this module will address the types of soil erosion, problems caused, societal and personal goals/benefits controlling soil erosion, and recognizing those best management practices that will curtail soil losses due to erosion. A completion date for the project is June, 1982.

The promotion of conservation tillage plays an important role in the Illinois Department of Agriculture. Regional field staff for the Illinois Department of Agriculture - Division of Natural Resources has been involved with the local groups regarding conservation tillage. In summary, the state-wide accomplishments listed below illustrate the Department's cooperative efforts being undertaken:

- Developed a conservation tillage seminar in cooperation with Carl Sandburg College addressing the needs of farming in the future.
- Negotiated with John Deere and International Harvester companies in cooperating, participating, and providing no-till planters for use by SWCD's.
- Assisted in establishment of 6 no-till demonstration plots involving 23 seed companies.
- Developed and co-sponsored with WTAX radio a conservation tillage seminar.
- Provided presentations on conservation tillage at regional tillage seminars, and to equipment manufactures and seed company representatives.
- Coordinated and developed conservation tillage exhibits at the Illinois State Fair.
- Cooperating with Sangamon County in the development of 13 conservation comparison plots to be used for tours.
- Providing assistance in developing a state-wide conservation tillage expo on State Director of Agriculture, Larry Werries' farm.

Conservation tillage is not the only way to control soil erosion but will provide the state with more immediate results when trying to meet our soil loss goals.

THE ROLE WE WILL BE PLEDGING AS THE EDUCATION COMMITTEE FOR THE ASSOCIATION OF ILLINOIS SOIL & WATER CONSERVATION DISTRICTS

Hillard Morris - Don Condit
Education Committee
Association of Illinois
Soil and Water Conservation Districts

As we look to the future we see education as a growing need to get our job done in preserving our soil. We feel this need as a cooperative effort, with other agencies to reach the people who will be responsible for good soil and water management. A good guideline for us is stated in the "Resource Agenda for the 80's." That is - through an effective Environmental Education Program, every citizen both student and adult should have opportunities for classroom and field study to acquire the knowledge, skills, values, attitudes and commitment needed to protect and improve the environment.

With this in mind we have selected two men on a part-time basis to develop a Conservation Planning Course for junior colleges in Illinois. With a $6,000 grant and the knowledge and expertise that Maynard Boudreau and Max Kuster have our goal is to complete this project by the end of 1982. They are working on the principle of two types of courses. One being a general study course or evening adult education class, the other would be a career program course designed for junior college students to receive credit toward a degree. These gentlemen are making contacts now, in colleges that might have a similar course and especially the Soil and Water Conservation District in the area of junior colleges. We feel the local S and WCD can be an important tool in that they have resource data, and can provide the right outdoor laboratories. Once this package is developed, it will be made available to the Illinois Community College Board for their approval. From here it could be implemented in the colleges that could fit the course into existing Agricultural Curriculum.

We want to emphasize the importance of some on going Awards Programs the Education Committee has in the Teacher of the Year and District Conservation Awards Program. These are programs offered each year and will continue to be offered. The teachers are people in a given district that do an outstanding job in education. Through an elimination process in the 16 councils. we could honor as many as 32 teachers at our Annual Meeting in July. There are two catagories for the teacher to participate in K- 8 and 9 - 12. The District Conservation Education Program is one with little participation thus far, with more Administrative Aides and Education Coordinators this should increase.

Over one-half of the districts participate in the Goodyear Awards Program. This contest is based on a District Annual Plan of Work and the Chairman's Annual Meeting Report where they relate what was actually accomplished. This Award Program, as do all of them, offers prize money and or a trip on the State, Regional and National level.

We will be making a donation to the 4-H Foundation, marking the money for Conservation Camp.

Our committee will be taking a strong look at grants, what is available, how a grant could be applied, should it be a mini grant to districts. Should the Association have a full time Education person, a request for a grant should be forthcoming.

At our Annual Meeting we will have a session especially for the Environmental Education people of the districts. A person will be explaining Project Learning Tree, as well as the exchanging of ideas of what the Environmental Educators are doing across the state. An update on the junior colleges short course will be given as well as a report on the sub-committee activities. We have a sub-committee working to create a handbook to be used by the districts throughout the state and to be distributed at the summer meeting in July. It will cover the following goals and objectives:

I. To explain the physical aspects and process suggestions for getting into schools. Also to be included would be who can help Districts and the role of conservation education in a variety of curriculum disciplines.

II. To provide suggestions for establishing credibility with an education program for all levels in the schools, and youth in the community (4-H) (Scouts).

III. To provide suitable materials available and filter inappropriate materials for community and classroom use. Updating and providing a working bibliography for District use.

IV. To give a foundation for the introduction to environmental education to conserve our natural resources with ultimate goals to include teacher workshops, classroom presentations, awareness and concern at the urban level and at the rural level to get conservation on the land.

V. To make readily available to District staffs, several supplements and appendices such as diagrams, charts, terminology and guidelines in soil and water resources and in related natural resource disciplines.

VI. To establish uniform basics and guidelines for holding poster, essay, coloring, farm plan, yield contests, etc.

IT WOULD SAVE DISTRICT STAFFS TIME, ENERGY AND PROBLEMS IN ESTABLISHING AN EDUCATION PROGRAM REGARDLESS OF HOW DETAILED THAT PROGRAM IS. WE FEEL COLLECTIVELY THAT IT WOULD SAVE DOLLARS AT THE DISTRICT AND STATE LEVEL, AND AT THE SAME TIME ESTABLISH SOME GUIDELINES THAT WOULD BE SOMEWHAT UNIFORM THROUGHOUT THE STATE.

EXTENSION PROGRAMS FOR IMPLEMENTING THE WATER QUALITY MANAGEMENT PLAN

T. Roy Bogle, Assistant Director
Cooperative Extension Service

The overall objective of the University of Illinois Cooperative Extension Service is to provide educational programs in agriculture, home economics and related subjects designed to help people solve problems. More explicit missions include (1) helping farmers and agri-business firms maintain and improve efficiency in crop and livestock production and marketing (2) encouraging farmers, homemakers and other decision-makers to increase adoption of practices consistent with wise use of soil, water, and other natural resources for economic and aesthetic purposes (3) assisting families in identifying needs, applying knowledge and allocating scarce resources to improve the quality of life (4) helping people become more effectively involved in public decision-making to achieve community economic development and other community improvement objectives.

Educational programs carried out by the Cooperative Extension Service are based on research results of the Illinois Experiment Station to the maximum degree possible. Agricultural and community problems encountered in the field are taken back to the Experiment station to determine if research may be carried out to help answer the questions.

General Environmental Program

The Newsletter "208 Update for Agriculture" was started with a grant from the Illinois Institute for Environmental Quality at the time the Agricultural Task Force was appointed. Its purpose was to provide information generated by the Task Force on Agriculture Non-Point Sources of Pollution to farm leaders, agency personnel and their advisory groups, legislative leaders and other interested people. A total of 27 issues with about 3000 copies for each, were printed and distributed over a 5 year period. Task Force studies were reported, water quality problems defined and proposed programs were presented.

A half time Agricultural communication staff person was employed to assist with writing and developing the newsletter, news stories, radio and TV programs, slide sets and TeleNet programs. This half time staff position has remained after the Institute grant was completed.

The information programs conducted by Extension, Department of Agriculture, farm organizations and others have helped to create an awareness of the water quality problems contributed to by agriculture. Generally, there is a very positive attitude in the state regarding pesticide use, livestock waste handling, soil erosion control and water quality. The positive attitude has been developed with aggressive information programs over the past 10 years.

Extension Specialists in all areas conduct programs that reflect the concern for environmental problems and assist with environmental improvement. Extension educational programs in pest control and soil erosion control have received the most attention since the Agricultural Task Force was organized.

Farmer Pesticide Training

The Cooperative Extension Service has provided educational programs to permit about 55,000 Illinois farmers to purchase, and properly and safely apply pesticides to their crops. The program consists of about 3 hours of classroom instruction. Upon completing the classroom training and passing a written examination, the Illinois Department of Agriculture issues a farmer pesticide application permit so the farmer can purchase restricted use pesticides.

Custom Spray Operators Training

The Illinois Cooperative Extension Service holds a training school for custom spray operators in January each year. The program, attended by approximately 1500 people, provides information on the latest research findings regarding pest control, current pest control recommendations, etc. People attending include custom spray operators, chemical dealers, farm managers, Extension advisers, USDA technical staff, researchers and farm leaders. Most of the people attending are involved with custom spray operation, selling chemicals or making recommendations for pest control. The Extension Service also conducts each year 12 Agricultural Pesticide Clinics, 20 multi-county IPM Workshops, 10 Urban Pesticide Dealers and Applicators Clinics and 1 Crop Protection Workshop.

Integrated Pest Management (IPM)

An IPM pilot program was initiated in 1973, as a result of funding by USDA. The objective of this multi-crop, multi-discipline approach to crop protection was to provide improved training and continuing education for County Extension Advisers, IPM consultants, field crop scouts, farmers, pesticide dealers and applicators, and other agri-business people in the concept and use of IPM systems developed by research and Extension personnel.

The overall goal of the program has been to obtain better management of pests leading to a savings in dollars to the producers while improving the environment.

During 1981, there were approximately 325,000 acres of cropland monitored for pest problems by 30 commercial "scouting" firms in Illinois. Another 16,000 acres were monitored by county advisers.

Pest Control Publications

The Cooperative Extension Service publishes a weekly newsletter providing information on crop pests that are found in the state. The letter helps people by telling them what pests are likely to develop in different areas of the state; what pests have shown up, if and when spraying should start, what materials should be used and how the materials should be applied. County Extension advisers follow the newsletter closely and can alert county farmers when pest outbreaks occur. Advisers also monitor pests in their county and notify the state staff when they find crop pests in their county.

The Cooperative Extension Service publishes circulars providing current recommended insect control in the following publications:

1.	Insecticide recommendations for vegetable crops	Cir. 897
2.	Insecticide recommendations for livestock and livestock barns	Cir. 898
3.	Insecticide recommendations for field crops	Cir. 899
4.	Insect control guide: home, yard, and garden	Cir. 900
5.	Alfalfa weevil pest management program	Cir. 1136

Approximately 17,000 copies of Cir. 899, Insecticide recommendations for field crops were distributed in 1981.

Soil Erosion Control

An average of 3 news releases per week are distributed through the state on some phase of soil conservation. The current attitude of most farmers is that we have a soil erosion problem and we must find ways of controlling it that permit farmers to stay in business.

Conservation Tillage

The Cooperative Extension Service held a Statewide No-till Conference at Peoria in January, 1980. The meeting was attended by 325 people from all parts of the state.

A series of 10 conservation tillage meetings sponsored by Extension, Illinois EPA, Illinois Department of Agriculture, SCS, and ASCS were held in December of 1980. A total of 2200 people attended the 10 meetings. The program was supported by a grant from the Illinois EPA.

A second series of 9 conservation tillage conferences was held in November and December 1981 with an attendance of 1274. The main reason for the lower attendance was late crop harvest which lowered attendance at the meetings held in November. Six articles based on the 1981 regional meeting presentations have been published in Prairie Farmer Magazine which will reach more than 100,000 Illinois farmers and land owners.

The State and regional conservation tillage meetings have also influenced the county agronomy day programs held in the state. Nearly all 120 agronomy day programs include presentations on the soil erosion problem, soil erosion control, conservation tillage or pest controls. Pest control is very important to making conservation tillage work and conservation tillage can be an effective soil erosion control practice.

Not only were farmers interested in attending the conservation tillage workshops but many are adopting conservation tillage practices. In 1980, there were an estimated 218,000 acres of no-till corn planted in Illinois.

The acreage increased to an estimated 350,000 acres in 1981. The acres of no-till soybeans increased from 400,000 acres in 1980 to 500,000 acres in 1981. It is further estimated that the acres of reduced till corn increased from 2.4 million acres to 2.7 million acres and reduced till soybean increased from 1.9 million to 2.8 million acres from 1980 to 1981.

General observations indicate that there is a substantial acreage of 1981 soybean land that had no fall tillage. Perhaps much of this land will be no till planted in 1982.

Three thousand copies of the proceedings for each of the 1980 and 1981 tillage conferences were printed and distributed in Illinois. The information provides guidance for individuals to follow in starting a conservation tillage program for soil erosion control. The 1981-82 Illinois agronomy handbook contains the latest information on crop management, including fertilizers, crop varieties and soil management. About 16,000 copies were distributed in 1981.

Forage Production

Soil erosion is much easier to control if grasses and legumes are included in the crop rotation. It may be necessary to include forage in the rotation on 3 to 4 million acres of Illinois farm land if we are to meet state soil erosion goals. Extension is working with the Illinois Grasslands Council with hay and grass production and the Illinois Hay Marketing Association in developing a stable hay market.

A forage production and forage handling field day was held on July 10, 1981 on the Harold Barnard farm in Wayne county. The morning program included tour stops on (1) Environmental Quality, pond renovation, fencing, mechanical feed handling, livestock handling equipment and no-till seeding. The afternoon program included demonstrations of hay mowing machines, conditioners, rakes, bailers, stackers and handling equipment made before about 500 people.

AGRICULTURAL RESEARCH FOR EVALUATING MANAGEMENT TECHNIQUES TO IMPROVE WATER QUALITY

R. G. Cragle, Director
Illinois Agricultural Experiment Station

Sometimes we're so far inside the forest that we spend a great amount of time looking at the trees and don't see the forest. Understanding the trees is important but so is understanding the forest.

Let me in a brief way, give you several points of reference which will tell you how our agricultural research program in the areas of soil and water is being shaped.

You have already heard here today about a number of management techniques designed to improve water quality. We will continue to orient more of our University efforts toward improving the management techniques associated with water quality and maintaining soil.

Our basic tenets are that we need quality water and we need agricultural productivity on a continuing basis for a very long time in the future. I will attempt to emphasize four areas of research as related to water quality.

1. We need to continue to refine the system.
   --How to keep animal wastes under control
   --How to control chemicals
   --How to keep soil from moving
   There has been progress in these areas recently and you have heard much about these controls today.

2. We need to be more involved with the development of comprehensive views of watersheds and a comprehensive view of all of the problems involved with a particular watershed.

   We are involved in several efforts of this nature, along with other agencies.

   These are the Lake Paradise watershed area and the Highland Silver Lake watershed.

   Towns and countryside are interrelated when it comes to water and soil. In the future, town and countryside must be interrelated in solving their joint problems.

   Much effort must be expended to work out models of partnership and models for solving the problems of the watershed.

The partnerships will involve a number of agencies and all of us must learn how to provide leadership for these combined agencies' efforts.

3. We need better data on the economic consequences of both control of a watershed or lack of control of a watershed. Physical and economic modeling is needed.

   Wes Seitz in our Department of Agricultural Economics has done some preliminary work on economic consequences of control measures or lack of control measures for farm land over a multiple year period of time.

   I believe that the concept of describing future economic consequences must be expanded.

   If we project economic consequences well, I believe we will understand better what additional specific kinds of research work we must undertake.

4. We need more benchmark information relating to soil losses, a major factor in maintaining water quality.

   I am impressed with the fact that there is little good information concerning the consequences of over 100 years of agriculture in Illinois or the consequences of 40 years of very intense agriculture in Illinois.

   We talk much about soil erosion. But where are we getting our base information? Agricultural leaders comonly say we have lost one-third or one-half of our top soil. And in contrast just recently a Nobel Laureate said that all of the concern over soil erosion is overemphasized.

   We know that we have a problem but fitted into the span of centuries I have not found the scholars who know how to put the consequences of the past 100 plus years of agriculture or the past 40 years of intense agriculture into perspective. We need some of this type of research information also.

The points that I have attempted to make give an indication of the broad direction that a number of researchers feel agricultural research in the area of water quality and soil conservation should take.

IMPLEMENTATION PROGRAMS AND ACTIVITIES OF THE ILLINOIS DEPARTMENT OF AGRICULTURE DIVISION OF NATURAL RESOURCES

Jim Frank, Superintendent
Gary Wood
Alan Meyers
Marvin Hubbell
Illinois Department of Agriculture
Division of Natural Resources

State Soil Erosion and Water Quality Advisory Committee Functions

The State Soil Erosion and Water Quality Advisory Committee first met on March 16, 1981. At that meeting the committee set as its major objectives, to develop a state soil erosion and water quality implementation strategy plan for the State of Illinois to be implemented by the appropriate agencies, and to advise the implementation agencies on matters as they relate to soil erosion and water quality programs.

Activities deemed as appropriate for the accomplishment of the objectives were:

Develop policies and guidelines for the committee to operate effectively and efficiently

Appoint a soil erosion and water quality advisory subcommittee to make recommendations to the committee on the funding of all future watershed and river basin projects

Develop the State Erosion and Water Quality Implementation Strategy Plan

Develop policies and guidelines for the subcommittee to operate effectively and efficiently

Review current soil erosion and water quality implementation programs for their compatibility with the State's Soil Erosion and Water Quality Implementation Strategy Plan

Assist in developing annual progress reports in compliance with the State 208 Plan.

Advise and assist the implementation agencies in the following areas:

1. coordination of soil erosion and water quality programs
2. long range programs

3. annual plans of work
4. recommendations for legislative action
5. resolving mutual problems
6. training needs

The Director of the Illinois Department of Agriculture and the Superintendent of the Division of Natural Resources co-chair the committee. Committee members include representatives from the following agencies and organizations.

State Soil and Water Conservation Districts Advisory Board
USDA Agricultural Stabilization and Conservation Service
University of Illinois, Cooperative Extension Service
USDA Soil Conservation Service
Illinois Environmental Protection Agency
United States Environmental Protection Agency
Illinois Agricultural Association
Association of Illinois Soil and Water Conservation Districts
Illinois Farmers Union
Illinois Environmental Council
American Agriculture of Illinois
Illinois Society of Professional Farm Managers and Rural Appraisers, Inc.
Agricultural Division of the Illinois Bankers Association
Illinois Women for Agriculture
Illinois Chapter of the National Farmers Organization
Illinois State Grange
Illinois Department of Conservation, Forest Resources and Natural Heritage
And one member was appointed Farmer at Large

Accomplishments of the committee during its first year of operation include the development of the initial draft of the State Soil Erosion and Water Quality Implementation Strategy Plan. They have created a subcommittee on education, which is chaired by the University of Illinois, Cooperative Extension Service. They have a Watershed Priority Subcommittee chaired by the Illinois Department of Agriculture and a Priority Areas Subcommittee chaired by the USDA, Soil Conservation Service. They have reviewed several recommendations for legislative action, and numerous other activities directly related to providing advice to the Illinois Department of Agriculture on soil erosion and water quality activities.

Erosion and Sediment Control

The 1977 Amendments to the Illinois Soil and Water Conservation Districts Act mandated the Department of Agriculture to develop and adopt erosion and sediment control guidelines. The Division of Natural Resources (DNR) on April 18, 1980, adopted the State Guidelines. From this date, each of the 98 Soil and Water Conservation Districts (SWCD) had two years to develop an Erosion and Sediment Control Program and Standards. The SWCD developed their local program and standards through the assistance and advice of an advisory committee consisting of local individuals.

The 98 Soil and Water Conservation Districts are now nearing the deadline for the completion of their program and standards. All districts with the exception of about a-half-dozen have held their public hearings to receive public input. As of March 19, 1982, seventy-one districts have had their program and standards approved by the Division of Natural Resources as consistent with the State Guidelines.

Soil Surveys

The Division of Natural Resources received $200,000 in fiscal year 1981 to accelerate the completion of soil surveys in Illinois. Soil surveys are currently underway in 20 Illinois counties. Surveys started prior to July 1, 1980, are funded by the Soil Conservation Service and the county boards. Those with contracts effective as of July 1, 1980, are funded 50% by SCS, 25% by the county board, and 25% by the State of Illinois. There are 50 Illinois counties that have modern soil surveys completed with 22 in progress. The following indicates the financial support provided by the State of Illinois to accelerate soil surveys.

County	Fiscal Year 1981	County	Fiscal Year 1981
Brown	$16,132	Effingham	$22,500
Bureau	$10,170	Mercer	$15,122
Calhoun	$14,505	Peoria	$38,676
Cass	$20,052	Piatt	$11,280
Coles	$ 9,074	Tazewell	$16,995
		Vermilion	$18,000

County	Fiscal Year 1982
DeWitt	$11,400
Jasper	$13,695
Whiteside	$15,860

Table I

Rate of Progress Required to Complete Soil Surveys in Illinois by 1991

Fiscal Year	Projected Start	Progress Complete	Number of Surveys Underway	Mapping Goal Acres
1981	11	4	20	1,500,000
1982	3	2	21	1,700,000
1983	2	2	21	1,800,000
1984	4	4	21	1,800,000
1985	6	6	21	1,800,000
1986	5	6	20	1,800,000
1987	5	5	20	1,700,000
1988	5	5	20	1,600,000
1989	0	6	14	1,500,000
1990	0	7	7	900,000
1991	0	7	7	700,000
Total	41	54		16,800,000

Twenty-three (23) counties are currently staffed or scheduled for staffing. These plus an additional twenty-eight (28) that need to be started, make up the total number of counties that need to be completed.

Table II

Estimated Cost and Acreage Goal
for
Completing Soil Surveys in Illinois by 1991

Fiscal Year	Agencies			Total	Mapping Goal Acres
	Federal	State	County		
	$	$	$	$	
1981	840,000	200,000	500,000	1,580,000	1,500,000
1982	860,000	298,000	530,000	1,720,000	1,700,000
1983	1,060,000	403,000	610,000	2,120,000	1,800,000
1984	1,330,000	501,000	700,000	2,660,000	1,800,000
1985	1,200,000	600,000	600,000	2,400,000	1,800,000
1986	1,140,000	570,000	570,000	2,280,000	1,800,000
1987	900,000	450,000	450,000	1,800,000	1,700,000
1988	800,000	330,000	330,000	1,460,000	1,600,000
1989	800,000	240,000	240,000	1,280,000	1,500,000
1990	700,000	200,000	200,000	1,100,000	900,000
1991	600,000	200,000	200,000	1,000,000	700,000
Total	10,230,000	4,246,495	4,930,000	19,400,000	16,800,000

In order to accelerate the number of acres surveyed per year and to reach the goal of having modern published soil surveys in all Illinois counties by 1991, it is necessary to increase equipment, manpower, photography, and laboratory needs with a peak occurring in FY 1986 (see tables).

Cost-Share Program

The Illinois Department of Agriculture, Division of Natural Resources was appropriated $500,000 in FY81 to initiate a cost-share program with landowners and operators for conservation tillage practices. Reduced tillage systems such as chisel/plant and disk/plant as well as no-till systems were eligible cost-share practices.

The Division of Natural Resources allocated funding to 48 of the 98 Soil and Water Conservation Districts in Illinois. The funding was based on conservation needs as well as the capacity to effectively implement and promote the program.

Payments to eligible contractors range from $10-$25 per acres based on the percent of crop residue remaining on the soil surface after planting with a maximum of 50 acres per contractor. Corn and soybeans are the primary types of crop residues, although variations exist in some Soil and Water Conservation Districts. Length of contracts also vary from one to three years depending on the Soil and Water Conservation District's program.

The purpose of the program is to provide an incentive to contractors which have not used these conservation tillage systems previously and are located in the Soil and Water Conservation District's priority areas. A strong educational and promotional program will develop as a result of this additional effort towards changing the tillage practices on Illinois sloping row cropped land.

Table III

Cost-Share Budgets 80-81

Carroll	$15,000	Boone	$10,000
Cass	$15,000	Brown	$10,000
Fulton	$15,000	Effingham	$10,000
Hancock	$15,000	Fayette	$10,000
Jefferson	$15,000	Henry	$10,000
Jersey	$15,000	Knox	$10,000
JoDaviess	$15,000	LaSalle	$10,000
Mercer	$15,000	Madison	$10,000
Monroe	$15,000	Marshall-Putnam	$10,000
Ogle	$15,000	McHenry	$10,000
Pulaski-Alexander	$15,000	Montgomery	$10,000
Rock Island	$15,000	Perry	$10,000
Schuyler	$15,000	Richland	$10,000
St. Clair	$15,000	Scott	$10,000
Union	$15,000	Stephenson	$10,000
Williamson	$15,000		
Henderson	$7,500	Calhoun	$5,000
Jasper	$7,500	Coles	$5,000
Lake	$7,500	DeKalb	$5,000
Lee	$7,500	Iroquois	$5,000
Mason	$7,500	Livingston	$5,000
McDonough	$7,500	Logan	$5,000
Pile	$7,500	Will-South Cook	$5,000
Saline	$7,500		
Sangamon	$7,500		
Whiteside	$7,500		

A total of 863 farmers received a cost-share payment this past year which amounted to an expenditure of $449,762. Soil loss on the 26,301 acres certified was 566,180.4 tons per year before implementation of the conservation tillage system. The soil loss after using a conservation tillage system was reduced to 195,487.4 tons per year which is a reduction of 370,693 tons per year. The average reduction in soil loss was 14.2 tons per acre per year, and average cost per ton of soil saved was $1.21.

Table IV

Statistical Summary of Cost-Share Program

863 farmers received a cost-share payment
26,031 acres qualified for payment
14.2 tons/acre/year was average soil loss reduction
$1.21 cost/ton of soil saved
$17.28 cost/acre

	Soil Loss Before	Soil Loss After	Saved	Acres	Average Reduction
0-till	375,689	86,921	288,767	14,538	19.9
Reduced till	190,490	108,565	81,925	11,493	7.1
Total	566,179	195,486	370,692	26,031	14.2

	Certified Payment	Cost/Ton	Average Soil Loss Before	Average Soil Loss After	Average Soil Loss Saved
0-till	332,539	1.15	25.8	6.0	19.9
Reduced till	117,223	1.43	16.6	9.4	7.1
Total	449,762	1.21	21.8	7.5	14.2

Administrative Aide Program

The Erosion and Sediment Control Program saddled SWCD's with increased responsibilities. Because districts are governed by individuals who volunteer their time, serious questions were raised concerning the ability of districts to meet these new responsibilities.

In FY 80 to help districts meet these responsibilities, the Department granted funds to provide 72 districts with 20 employees, thus beginning the Administrative Aide Program. These 20 administrative aides worked on a shared basis ranging between 3 to 5 districts per aide.

In FY 82 the Department continued to provide funds for administrative aides. Thirty-six aides were employed again working on a shared basis ranging between 1 to 4 districts per aide. All districts in FY 82 had the services of an aide.

It is anticipated that the program will continue in FY 83 under the same structure. To date, however, there are 2 vacant positions.

Priority Setting Process

In response to the Illinois "208" Water Quality Management Plan's findings and shrinking federal financial and technical assistance, the agricultural agencies and organizations within the State of Illinois under leadership of the Illinois Department of Agriculture has developed a priority setting process for soil and water problems. The discussions among representatives of agricultural interest have not been merely attempts at communication and understanding; these negotiations have resulted in real commitments of programs and resources. Furthermore, cooperation is not limited to goal-setting; the participants have pledged themselves to assist in programs of implementation. Thus, the process allows the gulf between policy formulation and implementation to be closed.

The State of Illinois has developed a soil conservation program which uses State and Federal resources as building blocks for local conservation program initiatives. The corner stone of this program is the close cooperation of the soil conservation agencies (SCS, ASCS, IDOA, AISWCD, IDOC, FmHA, and CEC) at every level. Although these groups have worked together for decades it was for limited program review, evaluation, and/or implementation. The new initiative seeks to improve that relationship and to coordinate the programs of these agencies so they compliment one another wherever possible.

This new commitment was demonstrated through a cooperative agreement signed by the head of the IDOA, IEPA, AISWCD, ASCS, ASCS State Committee, Cooperative Extension Service, and FmHA in September of 1981 (See Appendix A). Personnel at all levels were contacted by the agency head to inform them of the effort and to outline the role of each agency.

Guidelines on data collection, public involvement, problem identification, goal development and plan implementation were sent to each District (some districts had completed this process and many were in various stages of implementation). Once the local committee had identified the significant soil and water conservation problems in their area and assigned each a priority ranking, they began evaluating the resources needed to solve the problem. The targeting of local manpower and financial resources is encouraged wherever possible. When identified problems require additional resources a newly developed system for requesting program assistance is used.

Special Project Funding Procedures

Concurrent with the development of this system, the State of Illinois established a new procedure through which Districts and the ASCS County Committee could request special program assistance. This new procedure allows local conservation agencies to compete for special funding under five program authorities (P.L.566, Rural Land Treatment Watershed, ACP Special, Clean Lakes, Rural Clean Water, and Cooperative River Basin Study Programs) through a single application.

The procedure involves a three tier process for establishing local, regional, and state priorities. The stong support of project area land owners and local agency personnel is the most important and basic component of the land treatment watershed program. The first tier of the process is local involvement. The active participation from the Local Watershed Priority Committee Members (LWPC) is important, it allows each problem area to be evaluated from several perspectives. Once a problem has been identified and a plan of action developed, each participating group is expected to work toward the implementation of that plan. When local resources are inadequate to handle the problem the LWPC may apply for special program assistance.

Once the LWPC has completed its evaluation, the highest priority problem areas are submitted to a regional Land Use Council Watershed Priority Committee (CWPC) for evaluation (second tier). The Land Use Council is a grouping of local soil and water conservation districts designated by the AISWCD. These Councils are made up of from four to nine Districts which generally have similar resource conservation needs.

The CWPC screens all projects for their regional importance and then selects the highest priority projects for submission to the State Watershed Priority Committee (SWPC) (third tier).

The membership of the Watershed Prioritization Subcommittee consists of: (1) Illinois Department of Agriculture, (2) Illinois Environmental Protection Agency, (3) Water Resource Commission, (4) Association of Illinois Soil and Water Conservation Districts, (5) Illinois Department of Energy and Natural Resources, (6) United States Environmental Protection Agency, (7) Illinois Department of Transportation, (8) Illinois Department of Conservation, (9) Soil Conversation Service, (10) Agricultural Stabilization and Conservation Service, and (11) Cooperative Extension Service. This Subcommittee screens and prioritizes potential projects.

The potential projects are prioritized by program authority, and recommendations are made to the appropriate authorities. Those projects not selected are returned to its sponsor with review and justification comments. The projects that are recommended for implementation are forwarded to the Soil Erosion and Water Quality Committee for final screening and prioritization. Those projects are then forwarded to the Governor for approval.

The appropriate implementation agency must make a yearly status report on each project to the Soil Erosion and Water Quality Committee and the State Watershed Prioritization Subcommittee. The purpose of the status report is to insure that the planning and implementation of selected projects is completed as scheduled.

The new prioritization process for selecting rural land treatment and lake rehabilitation projects was established to improve the implementation of these programs to meet rural soil and water conservation needs.

A total six projects have been selected under the redirection. Three have been placed in a priority ranking with Ash-Loop Creek being number one priority project in the State of Illinois, second Spring Lake in McDonough County, and third Lake Kinkaid in Jackson County. Three additional projects have been selected for detailed study and evaluation under the cooperative river basin program. These are: Fountain Creek Watershed in Monroe County, Raccoon Lake Watershed in Marion County and Lake Sara Watershed in Effingham County. An 18 month study period has been started on these three projects which will result in a completed cooperative river basin study plan on each by July of 1983.

The State Watershed Priority Committee will select an additional five projects for study under this authority in May of 1982. The study period on these will begin in September 1982, completion is scheduled for January 1, of 1984.

The significance of this program lies in the types of problems solved, number of people served, and the overall benefits to agriculture. Within the six watersheds which have been selected they will involve a total of 112,200 acres, and control erosion on approximately 44,000 acres. This will protect approximately 34,500 acres of prime farmland, 332 miles of ephemeral intermittent, and perennial streams, 4,546 surface acres of lakes and the water supply for more than 148,000 people.

WATERSHED MONITORING PROJECTS TO EVALUATE BMP IMPLEMENTATION

Tom Davenport
Environmental Protection Specialist
Division of Water Pollution Control
Illinois Environmental Protection Agency

To control agricultural nonpoint source pollution, effective and efficient management programs and practices must be developed and implemented. A fundamental component of these management programs is the identification of specific areas that significantly contribute to the problem. The ability to identify and quantify "source" areas allows for targeting of resources and programs to correct the problem areas. Once a problem area has been identified, cost-effective Best Management Practices (BMP's) must be installed to control these problems.

Evaluation of nonpoint source pollution control projects is an integral component of the future implementation phase of NPS control programs. Watershed evaluation programs must provide guidance and inputs for many administrative functions, such as: 1) investment of funds, 2) justification for fund allocation, 3) verification of overall program effectiveness, 4) evaluation of regional effectiveness of RMS's, and 5) informing local land owners and/or operators as to the effectiveness of their efforts to improve water quality. Presently, in the State of Illinois, there are two watershed evaluation projects: 1) Blue Creek Watershed Pike County, and 2) Highland Silver Creek Watershed.

The Blue Creek watershed consists of 7,012 acres in east central Pike County, Illinois. It drains into Pittsfield City Lake through Blue Creek and its numerous tributaries. The Blue Creek Watershed is located approximately three miles northwest of Pittsfield and five miles south of Griggsville. Pittsfield City Lake was constructed in 1961 by SCS as a multiple purpose reservoir. The land use in Blue Creek Watershed is predominantly agricultural (78%). The terrain is hilly, and it has a high soil loss potential due to its steep slopes, fine-grained soils and agricultural land use practices.

The primary purpose of the monitoring and evaluation project is to determine the actual yield of pollutants (resulting from a variety of agricultural practices) to downstream receiving water and its resulting effect upon the water quality and use of the water resources. Monitoring and evaluation of actual BMP implementation progress on sub-watershed and yield of pollutants to the major tributary stream and public water supply lake will allow a reliable comparison of low and high cost practices and downstream yield reductions. Evaluation of cause and effect relationships between a variety of practices, determination of NPS yields from farm lands, requiring treatment to reduce water quality problems, and assessment of the impact of BMP's on both streams and lake quality.

A comprehensive monitoring network for the entire watershed was established by IEPA to document the basic hydrological, meteorological and water quality factors of the project area. There are 3 field sites, 3 tributary sites and a lake outflow site. The lake is sampled at 3 locations to determine water quality and subsequent impacts of BMP implementation.

There are 3 biological monitoring sites in the watershed, where macroinvertebrates are collected. Macroinvertebrates are used as indicator organisms of water quality improvement or degradation.

Computer-based modeling techniques were used to estimate erosion rates for the entire watershed and assess effects of a variety of BMP's. A non-point screening model, based on the USLE, was run on the entire basin to estimate potential soil erosion. This modeling effort is at 2 scales: 1) watershed scale where general factors were utilized; and 2) field level scale where existing and potential management scenarios were run.

The Illinois State Water Survey, under contract from IEPA, is carrying out the stream geometry and channel characteristic element of the overall Blue Creek Watershed project. This element will consist of 2 parts: 1) monitoring channel dynamics; and 2) analyzing particle size distribution of bed material at certain stream locations after rainfall events.

Three periods based on the amount of surface cover and land management activities were selected for evaluating seasonal variations in stream flow constituent concentrations and transport. These periods are: P1 -- fertilizer and seedbed establishment period (April-June); P2 -- reproduction and maturation period (July-November); and P3 -- residue period (December-March).

Results

Hydrology -- variability of stream flow was attributed primarily to precipitation patterns and land cover, precipitation was 18% below normal.

A total of 27 water quality parameters were evaluated at 3 water quality stations. There was a distinct successional trend with increased drainage area and water quality constituents evaluated. Several parameters assessed, exhibited general seasonal trends. Treflan, Dieldrin, Atrazine, and Lasso were the only pesticide compounds in measurable quantities.

Total suspended solids transported showed a definite "upstream-downstream" trend with lower quantities measured downstream. Over 98% of Water Year 1980's total suspended solids transport occurred during storm events at the upstream stations. The downstream station is dissimilar from the upstream stations due to the effect of the lake. The seasonal distribution of yield at each station reflected the interaction of precipitation, stream flow and sediment availability.

There were obvious seasonal and spatial trends exhibited by several parameters within the lake. Based upon various constituent concentrations, Pittsfield City Lake would be considered eutrophic.

Highland Silver Lake is a 600-acre lake situated at the base of a 30,946 acre watershed located in Madison County, Illinois. Agriculture is the predominant land use in the watershed (about 91%) and 6% in woodland. The topography of the watershed consists of 2 major land forms: 1) the nearly level area in the upper part of the watershed, which comprise the largest portion of the watershed; and 2) the rolling to steep areas associated with the tributaries and the lake.

The monitoring program for Highland Silver is almost identical to the Blue Creek monitoring program. Specific components of the overall monitoring strategy are: 1) physical/chemical water quality monitoring -- source identification, inflow/tributary monitoring, lake/outflow monitoring, lake arm monitoring, and computer based modeling; 2) biological monitoring -- structure and dynamics of fish communities, distribution and abundance of benthic insects; and 3) socioeconomic monitoring -- economic baseline establishment, on-site impact assessment, off-site impact assessment and farmer attitude assessment. This Monitoring and Evaluation Program will last for 4 1/2 years.

SOIL AND WATER CONSERVATION PROGRAMS

Ronnie Murphy
Assistant State Conservationist
Soil Conservation Service

The Resources Conservation Act passed by the Congress in 1977 initiated a process of assessing the condition of soil and water resources in the United States and development of a program to address those problems. In late 1981, the Secretary of Agriculture issued his Preferred Program for soil and water conservation activities. The Preferred Program has been examined very closely by the public. Their comments have been analyzed and summarized. The Secretary is presently reviewing the comments before submitting a Recommended Program to Congress.

The Preferred Program will change the direction of national soil and water conservation programs. First of all, national priorities are established. The specific concerns of erosion control and flood prevention are identified as the top priorities. Available resources will be targeted to areas where problems are most severe.

The partnership of the federal, state, and local governmental relationship will be strengthened. This will be accomplished through a process of problem identification, priority setting, and plan implementation. The Preferred Program provides the opportunity for block grants to state governments for planning and implementation of soil and water conservation programs.

Conservation practices will be emphasized which are most cost effective. Conservation tillage will be given a very high priority in solving erosion problems in the short-term future. The Preferred Program emphasizes application of cost-effective practices which will achieve the most benefits with minimum expenditures of funds.

Soil and water conservation programs of the future will be different from those at present. However, the existing delivery system of federal, state, and local is not expected to be changed drastically.

PROSPECTS OF FEDERAL COST-SHARE PROGRAMS FOR CONSERVATION IN COMING YEARS

Gilbert Fricke
State Executive Director
Illinois State ASCS Office

The Soil and Water Resources Conservation Act of 1977 (RCA) requires the Secretary of Agriculture to project future demands and the potential impact that meeting those demands will have on the Nation's soil and water resources. These resources are under intense pressure to produce food and fiber for domestic consumption and export. At the same time, the Nation's future agricultural productive capacity is uncertain because of continuing damage from soil erosion, pollution, and flooding; conversion of farmland to other uses; and shortages of water. Degraded soil, water and related resources reduce the quality of the environment and affect the standard of living in many areas of the country.

In view of this, I am optomistic on the prospects of Federal cost-share programs for conservation in the coming years.

Secretary Block has designated resource conservation as one of his top priorities. This commitment goes hand-in-hand with the Secretary's overriding concern to ensure that this nation has a strong, healthy and prosperous agriculture.

Farmers are more likely to employ good conservation practices if the farm economy is healthy. Thus, conservation can benefit from the successes of other policies of the Department that emphasize market-oriented agriculture, opening new export markets, and agricultural research - all of which will contribute to improvement of the farm economy.

I believe that future cost-share programs will put more emphasis on establishing and clarifying National priorities for addressing conservation problems associated with soil erosion and water resources.

I think we can expect emphasis on cost-efficient solutions to conservation problems. This should increase the acceptance and adoption of conservation methods and accomplish more for each public and private dollar spent.

There very well could be an increased proportion of USDA conservation program funds and personnel targeted towards critical areas where soil erosion problems threaten the productive capacity of soil and water resources.

I believe the direction and features of future USDA farm programs should follow the present acreage reduction program pattern and minimize conflicts that limit achievement of conservation objectives.

CHANGES IN USEPA STRATEGIES FOR CONTROLLING AGRICULTURAL NPS-POLLUTION

Gary Williams, Chief
Planning and Standards Section
Water Quality Branch
United States Environmental Protection Agency-Region V

What happened to 208? Where did it go? Was it a success or a failure? What has happened since original plans were completed? It's almost as if 208 went into a closet put on dark glasses or got put on a shelf. I don't think that is really what happened. What is occurring is a transition from high visibility planning to low visibility day-to-day grind it out implementation.

There apparently will be no additional funds available for 208 planning. Consequently, there will be no EPA program with an exclusive focus on NPS. Where states have identified agricultural NPS as a priority water quality problem however, there may still be some financial assistance available for planning to deal with this problem - Section 205(j) funds.

EPA believes that the concept of attainability analysis is the cornerstone for sound water quality management programs. Well - conducted attainability analyses will necessitate adequate consideration of NPS impacts and implementation of feasable control practices, and Point/NPS integration - consideration of both within a stream reach or a lake. In a nutshell, advanced treatment municipal facilities should not be approvable on stream segments significantly impacted by agricultural NPS unless and until the degree of improvement from feasable control practice implementation is factored into an attainability analysis.

EPA believes that adequate progress is being made in reducing the amount of NPS pollution in states that have comprehensive strategies and plans for addressing the problem. This includes states like Iowa, Wisconsin and Illionis e.g., soil erosion and water quality task force. We may not be able to fund large new demonstration projects in the future but present resources appear adequate to support the existing projects. We will be concentrating on obtaining quality data from these projects and assuring the widest possible distribution of those results for use by the states and local agencies.

Overall, there will be a major shift in emphasis from a focus on telling states what we think needs to be done to a focus on supporting needs identified by the state on high priority stream segments. As the state continues to identify its needs, EPA will work to find resources necessary to meet those needs.

Summary of EPA's Changes in Strategy in NPS's of Pollution

1st	No new comprehensive planning, but fine-tuning of the planning that's already been done.
2nd	Smaller scale focus - on individual stream segments as opposed to across the board standards.
3rd	Emphasis on the uses of water, how pollution prevents attainment of those uses, and what can practically be done to control.
4th	Consider both the point and NPS to economically achieve the use.
Finally	Increase flexibility for state and local agencies to determine how best to meet their identified priority objectives.

PROSPECTS FOR PROGRAM CONTINUATION AND EVALUATION

Robert P. Clarke, Manager
Planning Section
Division of Water Pollution Control
Illinois Environmental Protection Agency

The significance and magnitude of our erosion and water quality problems has been documented by the diligent efforts of the Agricultural Task Force and the positive efforts made by the agricultural interest since the adoption of the 208 plan. The roles and responsibilities of agencies to implement the plan has required a transition from planning to management. The Agency role has evolved from one of leadership to one of support and oversight of the key designated management agencies: the Department of Agriculture, the Extension Service, and the 98 Soil and Water Conservation Districts. These efforts have been complemented by emerging program initiatives and continued efforts of many other agencies and parties. In overview, the major institutional initiatives recommended in the Water Quality Management Plan have been developed with firm and aggressive efforts and inspiring cooperation of many individuals.

The primary force which can make this program effective is the agricultural community. Farming, as an enterprise, is one of Illinois' most diverse and important economic elements. The significance is exemplified by the fact that over 80 percent (28.7 million acres) of the state's land is classified as farmland. The interest, support and criticism on the 208 Plan in public meetings and hearings suggest that agriculture is the primary concern in our efforts to control non-point pollution problems. We received more than 1,100 comments and had over 200 witnesses testify at the public hearings on the plan. It is noted that about three out of four of those testifying represented farm interest. This indicates the significance of programs to the people of the State. While we have had soil erosion control programs for about 50 years, the plan recognized erosion as the most significant problem. The recommended control strategy calls for a 22 year voluntary program. Recent reviews of the USDA "preferred program" indicate that major changes may be necessary to have "real progress" to maintain productivity of the resource base within program and funding resources.

The issue that received major attention was the method recommended to attain soil erosion control goals. The Illinois Department of Agriculture has adopted statewide soil erosion guidelines. The Agency revised the Water Quality Management Plan during 1981 to adopt the goals and objectives of IDOA's Agriculture guidelines as the official timetable. These changes recognized the positive aspects of a voluntary program and helped simplify and refine the criteria. As of now, most of the soil and water conservation districts have adopted and approved soil erosion standards compatible with State guidelines. Six of these have standards more stringent than the State guidelines.

The soil erosion standards are voluntary now, but the districts have authority to inspect and investigate complaints of violations, offer technical assistance, and hold hearings to determine reasons for non-compliance. The Department of Agriculture may hold a formal hearing. If the findings indicate that sediment delivered to waters is causing a water quality problem, the Department will forward its finding to the Agency and the Pollution Control Board. Comparatively, Iowa has handled two complaints per year per district in their program.

The Department of Agriculture prepares an annual report to evaluate progress toward reducing water pollution resulting from agricultural sources of soil erosion. This report will cover research and education activities, progress toward meeting guidelines and standards, updates of the Conservation Needs Inventory and progress on program implementation.

The Agency is to develop and propose more specific water quality regulations for sediment pollution to the Illinois Pollution Control Board.

The intent is to propose more definitive water quality criteria for suspended pollutants so that objective standards are available for determining water quality violations. It is noted that the District soil erosion standards become effective on January 1, 1983. However, the primary criteria for compliance is the determination of soil erosion rates for the goals and does not evaluate or quantify water quality damages. This important distinction is a critical point. Although procedures exist to readily identify and determine gross erosion, a criteria and procedure must be developed to allow quick and reliable water quality assessments.

The Agency has developed a simple water quality assessment technique for determining problems for watershed prioritization. The problem of quantifying sediment damages remains until specific criteria are established and testing procedures are developed.

The Agency and the Pollution Control Board are the management agencies responsible for water quality monitoring and enforcement of the provisions of the water quality related elements of the soil erosion program. The Agency activities supporting this mandate include the following elements:

1. Grants-in-aid are being provided to the Association of Soil and Water Conservation Districts and Department of Agriculture for assistance in developing an agricultural strategy and a watershed prioritization process.

2. Grants were provided to develop and refine land use and watershed analyses techniques such as Adapt computer procedures.

3. Grants were provided to assist in developing progress reporting procedures.
4. Special studies are being conducted on Blue Creek Watershed to monitor and evaluate BMP effectiveness, sediment delivery, water assessment techniques, and lake effects.
5. Agency cooperative study for the Highland Rural Clean Water Program monitoring and evaluation effort.
6. Ambient and Volunteer lake monitoring and assessment.
7. Section 314 Clean Lakes Program.
8. Sediment Monitoring Network and Ambient Monitoring Program.
9. Flow Variable Water Quality Criteria.
10. Water Quality Standards Revision (WQMIS).
11. Cooperative efforts for River Basin Planning and ASCS programs.
12. The handbook being developed by IDOA.

The overall program, as administered by the Department of Agriculture, will be evaluated at the end of the five-year initial period. The comprehensive evaluation of progress will be made by June 30, 1984. This will provide a basis for determining the advisability of continuing the role of the Department of Agriculture or of considering other institutional arrangements. The primary criteria will be based upon the extent to which soil erosion goals have been met. Since the goal was set that all lands be at or below four "T" value after 1983, assessments must consider whether this goal is met and whether progress is being made to achieve the January 1, 1988 goal that all lands are kept at or below double "T".

The essential element to assure achievement of goals is to establish reachable goals and provide an adequate means of accountability. The voluntary program assumed certain levels of funding for program support and cost-sharing. Budget constraints have been imposed recently as well as a different financial prospectus for agricultural production. State cost-sharing has not been a continuing resource as anticipated. In addition, the implementation of Secretary of Agriculture's RCA program will cause changes. Reassessment of the program after the initial five years must account for responsible progress, refinements in technology and assessments, and changes in feasible options. To be successful, responsive cooperation must be given. The critical element is to start treating the lands causing the bulk of the water problems.

ILLINOIS FARM BUREAU'S OUTLOOK ON PROGRESS OF IMPLEMENTING ILLINOIS' WATER QUALITY MANAGEMENT PLAN

Leonard Gardner, Executive Director
Governmental Affairs Division
Illinois Farm Bureau

We are pleased to be a part of today's seminar and to have the opportunity to present our views on the progress of implementing the Illinois Water Quality Management Plan and to share with you some observations relative to the outlook for the future.

I suppose we could summarize our feelings as to the progress that has been made as "pleased, but never satisfied." Let me suggest we have made rather substantial progress in at least three areas since the development of the Illinois Water Quality Management Plan.

1. I believe there is a much greater awareness on the part of the agricultural community as to the problems of soil erosion and sedimentation and their adverse impact upon the water quality of the state. I'm convinced there is a desire on the part of most farmers of the state of Illinois to do a better job in controlling soil erosion and sedimentation problems. I base this conviction on several factors.

    a. Four or five years ago questions raised by farmers at meetings reflected an apprehension and a concern about what the program was designed to do and where it would take them. Today the questions that you are likely to receive from a farm audience revolve around "T" values, the Universal Soil Loss Equation, the amount of soil loss that can be tolerated and the various kinds of practices and programs that can be used to minimize soil erosion and sedimentation. This reflects a much deeper awareness of the problem and the desire to do something about it rather than a preoccupation with apprehensions about the program and its consequences.

    b. The increased awareness of the problem is reflected in the fact that there has been a sharp increase in the attention given to various tillage practices including the number of articles written and the attendance that has been generated at various tillage seminars and demonstration fields. There is no question but what substantial progress has been made in this regard in the last two or three years.

    c. The increased awareness of the problem was reflected in our own organization in the development of the much stronger policy position on the whole area of soil conservation. The discussions in the county Farm Bureaus, with our Tentative Resolutions Committee and with the delegate body during the development of this policy position reflected a much stronger commitment to an improved soil erosion and sedimentation control program in the state of Illinois than we had witnessed in years past.

2. A second bit of evidence that I think can be used to demonstrate that Illinois farmers are making progress in implementing the Water Quality Management Plan is the amount of reduced tillage that is occurring in the state of Illinois. In 1977 there were roughly 400,000 acres of zero-till in Illinois. In four years, in 1981, zero-till acreage has more than doubled to 850,000 acres. I submit to you this is rather significant progress. There is also rather significant progress in the amount of reduced or conservation tillage. In 1977 something less than three and one half million acres of reduced tillage were found in Illinois. This acreage has grown to roughly five and one half million acres in 1981. I would submit that the change in zero-till and the change in reduced tillage crops in the past four years are significant and do reflect a concern and a commitment on the part of Illinois farmers to alter their practices in consideration of water quality of the state of Illinois.

3. A third evidence that there is progress being made in the Illinois Water Quality Management Plan is the priority that the plan has received within the Illinois Department of Agriculture. Several years ago a new Division of Natural Resources was established and while the financial condition of the state has restricted some of its programs, there is no question in the minds of most observers that the Department's commitment to making improvements in the Illinois Water Quality program are certainly much stronger today than they were five years ago.

I would submit the progress that I have mentioned above has been made during the time when the agricultural economy was going through some very severe stress and strain. Farm income is near record lows. Consequently, farmers are hard-pressed to make acquisitions of equipment which will permit changes in tillage practices. In addition to a very tight farm economy, budgets of both the state and federal governments have been under a good deal of pressure. Conservation tillage cost-sharing programs have, for all practical purposes, been cut out of the budget. The amount of manpower available to assist farmers in various kinds of conservation efforts has been severely limited. New state financial support for soil conservation programs has not materialized. Yet I am convinced that progress has been made not only in accomplishments, but in the attitude and desire on the part of the farm community to do a better job.

Now there are several concerns that confront us as we look to the future. We are concerned how "success" under the voluntary program will be measured. I know that we are making progress in getting farmers to change their tillage systems as I had noted earlier. But I must question, how good is our data? How accurately does it reflect the rapidly changing conditions in agriculture? And how much change will be needed by the 1984 review date of the 208 plan? Can we adequately measure the impact of the tremendous increase in education and information programs in the past four years? We are convinced that they have had a major impact upon Illinois farmers, yet just exactly what tools will be used to measure these programs and their effectiveness; and how will those who stand in judgment of the voluntary programs apply those tools.

The second area of concern is to the data base. It appears the data base upon which we measure progress is insufficient. Certainly in some cases it is controversial. There are questions relative to the validity and accuracy of some of the statistics now used. We have a concern over the data base, some of which was collected in years gone by, as to whether it is sufficient and whether it can be successfully used as a basis for a knowledgeable comparison of progress.

As we look to the future, we are confident that the voluntary 208 program can move forward. We are confident that with the combined efforts of all the groups and organizations concerned that we can prevail upon the good judgment of the farmers in the state of Illinois to continue to place a higher emphasis on good soil conservation and sediment control practices.

We are confident that new incentives can be developed to entice reluctant farmers to try new tillage practices and yet protect them from adversity in their trials, and at a very limited cost to the state and federal budget. We are confident that "if there's a will there's a way" to resolve if not solve our erosion problems.

While many of us who have labored in these fields have been very dissappointed at the level of support that the programs have received from both the state and federal government, we recognize the times which we are in and the pressures that are on both the state and federal budgets. We are hopeful, and in the long-term confident, that the conditions will change and that the priorities will be adjusted so that the protection of our number one resource, the productive soils of this state and nation, will again receive its due consideration and that concentrated efforts can be applied to making further progress in this regard.

OBSERVATIONS ON IMPLEMENTATION
OF
ILLINOIS' WATER QUALITY MANAGEMENT PLAN

Judith Joy,* Past President
Illinois Environmental Council
Former Member, Soil Erosion Subcommittee
Agriculture Task Force on Non-Point Sources of Pollution

From the official statistics and my own observations I can see that conservation tillage is being more widely practiced on many farms. For many farmers, the change to an alternate tillage system will be all that is required to meet the T-values; and I think we can assume that this change will come about without recourse to burdensome regulations.

A greater problem exists, however, on land that must be taken out of row crops and put in pasture or hay crops. For some landowners this change will necessitate a conversion from a cash grain operation to one that includes livestock or hay production. This change is not likely to be welcomed by many farmers as it may necessitate an economic loss and an expenditure of funds which many farmers, particularly at this time, are ill prepared to make. The fact that farming has become less diversified over the years is one reason why more marginal land has been put into row crops; but I doubt whether many operators have the inclination to return to the more diversified type of farm which was common a generation ago before farms became so large.

I therefore doubt whether many farmers will take land out of row crop production without some incentive to do so. Even if many farmers were willing to make the change, there may be a lack of skills, marketing opportunities and capital which make it difficult for them to make this conversion.

However, if this change is not made, the soil will continue to erode and the land will inevitabley drop in productivity. The history of our nation is replete with stories of hard scrabble farmers who wore out one farm and then moved westwards to new and greener pastures.

Without belaboring the point, I think we will all realize that with the projected world population growth such thinking is no longer acceptable. I believe most good farmers share the view of stewardship, and realize that although they may hold legal titles to the land that ownership also entails responsibility to preserve it. But, as in every other business, there are some farmers who, whether by design or ignorance, are doing a poor job. What we must ask ourselves is if we can afford to allow these bad operators to continue to destroy a national resource.

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*Judith Joy, although unable to attend the conference, submitted this statement for inclusion in the proceedings.

There is another aspect to the problem of soil erosion. A farmer might conceivably be allowed to ruin his own land if he were just harming himself and his heirs. In many instances, however, he is causing direct harm to the public which results from the sedimentation of lakes and streams.

There are many examples one might cite. The filling of the backwater lakes and the destruction of fish and wildlife habitat along the Illinois River has been thoroughly documented. The City of Decatur is now comtemplating building a new reservoir because Lake Decatur has silted up.

Many other lakes and reservoirs in Illinois are filling up so quickly tha their lives are being shortened. Unless they are dredged, new reservoirs will have to be built at an enormous cost to the taxpayers. In a flat state like Illinois, it may also become increasingly difficult to find appropriate reservoir sites. And if the new projects are constructed, more people will be displaced and more cropland taken out of production.

It is a widely held ethical principle that one ought not to do something if his behavior is harming someone else. I think farmers and law makers must realize that certain farming practices are, in fact, doing harm to the general public.

I would very strongly suggest that the protection of crucial watersheds be given top priority in receiving any funds which may be available for soil conservation. I realize that many farmers are financially unable to make the necessary changes without some assistance. I also realize that state and federal funds are very scarce.

One of the suggestions that was made to the Ag Task Force by Dr. Richard Sparks and myself was that a small tax be included in municipal water bills which could be used by the farmers in the watershed to help pay for terraces and other conservation practices. This suggestion received a less than lukewarm reception; however, I still think the idea has considerable merit and would allow the user to help pay for the protection of the resource.

In many states the protection of watersheds is given a very high priority value. I think we in Illinois might develop some measures which would deter landowners within a designated watershed from converting hilly pasture or woodland to row crops without putting in terraces or other structures to minimize erosion and sedimentation.

I am sure that most farmers realize by now that if they do not make a success of the voluntary program, they may be faced with a mandatory one. I think many employees of the SCS dread this possibility even more than the farmers, as they have no desire to be "policemen."

I certainly hope that the voluntary program will work; however I am not completely confident that it will. When it is time to evaluate the program, I hope that it is done with the greatest scientific detachment and without consideration for the possible political outcome.

I have heard from many farmers that they "don't want the government telling them how to farm." If they are doing as good a job as they say, I doubt very much if the basic guidelines would have much affect on their overall operation. While the majority of farmers will understand the need to preserve the productivity of our soil, there will obviously be some who will consider it an infringement on their individual rights and just another step towards socialism.

I hope that these frequently vocal critics will not unduly sway our farm organizations or political leaders. The preservation of individual freedoms is tremendously important to all of us; but each of us has to make some concessions to the greater public good. And few things are more important to the continued prosperity of this nation than the protection of the fertile soils with which we are so fortunately blessed.

SOIL AND WATER CONSERVATION DISTRICTS' PROPOSALS FOR MEETING CONSERVATION NEEDS

Roger Rowe, President
Association of Illinois
Soil and Water Conservation Districts

The Illinois Water Quality Management Plan charged the ninety-eight SWCD's with being the local management agencies for agricultural nonpoint pollution control. Essential elements of the districts' programs to meet this mandated state program include:

1. Sound resource information
2. Education and information
3. Technical assistance
4. Landowner incentives
5. Work in priority areas
6. Evaluation

Our Association has been working for several years to build legislative support for a comprehensive conservation package to address these needs and we are pleased to accounce today the elements of the package.

First, for resource information, the cooperative soil survey needs to be completed on schedule in 1991. This year's state budget falls $25,000 short of keeping it on schedule and it will be difficult to bring it up later.

Second, and third conservation education and information and technical assistance needs to be greatly expanded at the county level. We believe that one-on-one landowner contact is the key to getting the conservation job done, particularly with those landowners who have not cooperated in the past. We also need a greater emphasis on conservation education.

We see these roles being handled through a cooperative effort at the county level with heavy emphasis on those people who, in the past, we have called administrative aides. Their work is very valuable but it is scattered typically over 3 or 4 counties. On the average an aide spends 13.5 hours per district per week and that is completely incompatible with achieving the districts' or the states' goals.

Let us reflect on the manpower needs identified in the water quality plan. Funds were to be made available to conservation districts for carrying out the water quality programs. About $2 million (1977$) was to be made available each year. Districts are presently receiving less than a third of this is 1982$.

Annual technical service costs of about $7 million (1977$) were estimated. Districts have received none of these funds. Although the Soil Conservation Service documented the need for 400 man years annually to meet the state's goals, the actual number of SCS field staff was reduced from about 215 in 1977 to about 200 in 1982 due to federal program cutbacks.

Our action package calls for $1.1 million for 62 conservationists! This will provide one conservationist for each conservation district. The existing 36 conservationsists will be trained to do more technical work while still doing some administrative and information work. Most importantly they will be converted to single county operations rather than existing 3-4 county operations. About $64,000 in inter-county travel expense and very difficult administrative situations will be avoided.

Let us look deeper into what we propose. Almost fifty years of conservation experience indicates one-on-one contact between technically trained conservationists and the landowners is the key element in the conservation districts success. One conservationist working cooperatively with landowners can likely achieve an average of 1500 acres/year of adequately treated land. Typically, the resulting conservation plan will need to be overhauled every twelve years.

The most cost efficent means of hiring conservation aides is through local conservation districts. Districts have developed job descriptions, personnel management policies, and personnel management skills. Conservation districts provide local supervision, valuable insights into community needs and desires, and guidance in dealing with landowners.

Technical supervision and training for conservationists is done primarily in the field by Soil Conservation Service personnel. As conservationists are trained they increase in proficiency ratings related to the SWCD technical guide. Training is also provided by the Illinois Department of Agriculture and the Cooperative Extension Service.

Conservationist qualifications will include:

1. Agricultural background.
2. B.S. in Agriculture or related resource management field.
3. Excellent communication skills and ability to work with land operators.

Conservationists duties will include:

Assisting and working with land operators to help them reach the Soil Erosion and Sediment Control Standards. Specific work elements include:

1. Providing land operators with an inventory based on the Soil Survey, the county erosion plan, and other materials.
2. Assisting the landowner in evaluating soil loss through the use of the Universal Soil Loss Equation.
3. Developing with the land operator a farm conservation plan to reduce soil loss to 'T'. The plan may be over a 5 to 10 year period if indicated by economic conditions.
4. Surveying the laying out conservation practices such as terraces, contours, grass waterways, diversions, sediment catchmet basisn, and assisting land operators to recognize the value of such land management practices as conservation tillage, crop rotations, manure management, etc.
5. Supervising and certifiying construction work by contractors and assiting with incentive programs when available.
6. Instilling a land and soil stewardship ethic in all citizens.
7. Assisting SWCD directors with myriad other land and water management programs.

Conservation districts recognize the difficult budgeting situation and the recession, and are not requesting the 200 positions nor the approximately $15 million (1982$) needed to keep on schedule with the water quality plan.

This request is responsible and reasonable and as we evaluate its effectiveness we will come back with additional manpower requests, if necessary, to meet the program needs.

With respect to landowner incentives for nonpoint pollution control, we would like to see an annual cost share program similar to Iowa's $5 million program, Wisconsins $4 million program or Minnesotas $2 million program, but we are not asking for it at this time due to budget constraints and the nature of the Illinois Soil Erosion and Sediment Control Program.

Unlike programs in those states, Illinois has established measurable goals which emphasize "worst first" and target the available resources to the most needed areas.

The state guidelines gave Soil and Water Conservation Districts two years (April 18, 1982 deadline) to adopt a local programs and standards which are consistent with the state goals and are approved by the Illinois Department of Agriculture.

Virtually all conservation districts have developed these standards and are preparing for the complaint process which will begin January 1, 1983. Anyone may make a complaint which will be investigated by the SWCD. Land operators found to be in violation of the county standards will be targeted for technical and incentive assistance. If land operators do not meet their obligations, the Illinois Environmental Protection Agency may ultimately receive the case.

To be in compliance with the guidelines cropland will be at or below the following standards:

4 'T' by January 1983

2 'T' by January 1988 except on land with 5% or less slope where 'T' can be achieved through conservation tillage

1 1/2 'T' by January 1994

'T' by January 2000

('T') represents the average soil erosion rate which can be tolerated while maintaining long term productivity. Most Illinois soil types can tolerate the loss of 3-5 tons of soil per acre).

With the incentive part of our package, we are aiming for the 1988 standard with our unique and innovative Conservation Tillage Risk Share Program. The concept arose from meetings in September and December, 1981, to which 14 agricultural and two environmental groups were invited. At the meetings new agricultural conservation ideas and approaches were raised and discussed. Meeting the guidelines, program efficiency, minimal funding, teamwork and value to both agricultural and nonagricultural sectors were strong concerns of meeting participants.

We say that traditional incentive programs offered "carrots" that were quickly consumed. With this approach of having a "carrot" without eating it and with the utilization of the county level expertise, we believe we can really make this incentive stretch.

The objectives of the conservation tillage risk share program are to

1. Provide conservation tillage demonstration areas.
2. Develop and utilize the best county level conservation tillage management.
3. Investigate crop yields, soil conservation and farm profits with conservation tillage systems.
4. Assure particpating farmers that they will not lose yield on conservation tillage plots.

Let me emphasize that it is not a research but a demonstration program. The local technical committee will utilize research that has been done by the University of Illinois and by seed and equipment companies in developing their management plans.

Here is how it will work:

At the state level

1. The legislature will appropriate a one-time conservation tillage demonstration and risk share fund of $1 million, and authorize the Illinois Department of Agriculture (IDOA) to develop contracts with Soil & Water Conservation Districts (SWCD's) to carry out the program.
2. IDOA will target funds to all SWCD's based on conservation tillage needs, and their requests, will set minimum contract levels, and will negotiate contracts with each SWCD.
3. IDOA will perform fiscal and program audits as part of biannual SWCD audit.
4. The University of Illinois Cooperative Extension Service will continue to provide conservation tillage information and education programs.

At the county level:

1. The SWCD will select priority areas in the county and set guidelines for selecting participating farmers. The SWCD will have overall responsibility and will sign contacts with the state and participating farmers.
2. The SWCD will select a technical advisory committee (TAC) which may be made up of representatives of:

   Cooperative Extension Service,
   Soil & Water Conservation Districts,
   Soil Conservation Service,
   Agricultural Stabilization & Conservation Service,
   Farmers Home Administration,
   Vo-ag teachers,
   Farm groups,
   Agribusiness representatives.

The TAC will develop the county program within the state guidelines and will assign responsibilities, in a plan of work.

3. The SWCD will contract with the farmer to have two 5-20 acre demonstration plots.

4. The SWCD will receive state funds, bank them, and earn interest. Alternately, the state may hold the funds if it sets up an entirely segregated account.

5. The SWCD will guarantee the farmer by contract that he will not lose yield on the conservation tillage plot according to the following formula: number of acres x loss in yield x government reserve rate = payment (not to exceed $50/acre).

6. The best conservation tillage management available will be utilized on the conservation tillage plots. Conventional methods will be used on the other plots.

7. A SWCD or TAC representative must be present for yield determinations which are made by combining, weighing, moisture testing, and certifying as #2 corn or beans.

8. The SWCD will pay the farmer only for a loss of grain yield.

9. The SWCD/TAC will keep accurate management records, yield records, soil loss estimates and summarize them in an educational brochure. The value of lost soil will be estimated.

10. A field day or tour will be conducted to show plot results, and news media representatives will be invited.

11. After three program years, the SWCD may use the remaining program funds for cost sharing or for a low interest loan program for enduring conservation practices. No funds may be used for administrative or personnel costs.

By far the most important level for the risk share program is at the farmer level. Here is where farm programs are either made or broken. Here is how it will work:

1. The farmer will devote a portion of his land to side-by-side demonstrations of conventional and conservation tillage.

2. The farmer will use his normal methods on the conventional plot. He will agree to manage the conservation tillage plot according to the recommendations of the SWCD/TAC and to keep accurate records.

3. The farmer will agree to weigh and certify corn from both plots.

4. If there is a loss in yield with conservation tillage, the farmer agrees to repeat the plots a second year.

5. If the conservation tillage plot outyields the conventional plot, the farmer has no obligation. But he will recognize the value of conservation tillage.

6. All grain produced remains the property of the farmer.

7. The farmer will agree to allow public disclosure of all information collected through this program.

The conservation tillage risk share program will not solve all of the State's soil and water problems but it will help districts in meeting the 1988 standards. If twenty acres are converted to conservation tillage for every acre potentially covered by risk share plots we will have impacted about 1.2 million acres. It is roughly estimated that abut 5 million acres can be brought to 'T' through only conservation tillage.

We will not have addressed enduring conservation practices such as terraces or waterways except in possible redirection of other incentive programs toward those practices. We will still need a major state or federal program to meet guidelines for land over 5% slope for 1988 and for the 1994 and 2000 standards. However, we believe this appropriation will give us a much better opportunity to match potential federal block grants.

With respect to working in priority areas we believe conservation districts and their staff have made this switch already. It is most important that state and federal target areas should take into consideration and be consistent with the SWCD priorities.

Finally, evaluation of SWCD effectiveness in meeting the goals has been going on for a long time. We are happy to hear that the Soil Conservation Service has recently developed a reporting system directly tied to measuring achievement of the state goals.

In summary, SWCD"s have come a long way but they need major state incentive and manpower programs now to meet the state goals. Conservation districts see billions of dollars going into point source water quality projects which will show only slight impacts on water quality and minimal impacts on sedimentation, erosion prevention, flooding and maintenance of productivity. There is a tremendous imbalance in the cost effectiveness of these related programs. Districts are asking for minimal state support.

We are also asking for the continued support of the organizations represented here today. When we meet again next year will you be able to report that you have solidly supported the passage and development of this conservation package? We hope the answer is yes.

208 IMPLEMENTATION: AN ASSESSMENT OF PROGRESS TOWARD THE CONTROL OF SOIL EROSION AND PESTICIDE POLLUTION

Malcolm P. Levin
Associate Professor
Environmental Studies Program
Sangamon State University
Springfield, Illinois

In the assessment of 208 progress that follows, I will restrict my remarks to two areas, to the implementation of soil erosion control on agricultural lands and to the control of pesticide pollution. From my perspective, the conference in which we are participating today seems especially appropriate at this juncture - a time when big government is increasingly under fire and at a time when both federal and state budgets, especially EPA budgets are being cut. It is indeed paradoxical that a major governmental and citizen effort may become only one more example of a failure of public policy. We have spent large sums of federal and state money, we have utilized the donated time and services of various citizens and public interest groups, and we have observed the establishment of entire divisions and sections of the state Environmental Protection Agency (EPA) and the Department of Agriculture (IDOA) to reduce or eliminate these sources of environmental degredation. Yet, as we meet here to discuss the progress of 208 implementation, the public outcry for lower taxes and the government's reduction of services seem to illustrate a lack of ability to give high priority to the problems of soil erosion and pesticide pollution. There is no clear moral commitment to a health environment and now it appears that there are no dollars to obtain many of the goals of the 208 Water Quality Plan. Thus, as I comment on our "progress" in 208, bear in mind that I have serious reservations about our ability to attain the goals.

In reviewing the first Progress Report (IDOA, Division of Natural Resources, Sept. 1979 - Dec. 1980), one immediately notes the discrepancy between needs in the problem assessment statement and the funds which are available for encouraging and implementing soil erosion control practices. By example, consider, the Agricultural Conservation Program's (ACP) cost-sharing. Based on 1977 figures - and duly noting 4 years of run-away inflation - the total annual cost to reach the T-value by 2000 was calculated to be about $33.8 million. Using the report's assumption of an estimated 50% cost-sharing, Illinois falls $10 million short annually after a combined federal and state allocation of resources. I note that these figures are pre-Reaganomics. Federal funds for cost-sharing in FY 1982 were in fact down $500,000 from the FY 1981 figure of $6.2 million. Moreover, the state allocation declined from $500,000 in FY 1981 to zero dollars in FY 1982. At this point in time, our goals of reducing soil erosion look even bleaker. Nationally, the present plan, that is FY 1983, is to reduce spending in the Agricultural Conservation Program from $190 million to $56 million, a reduction of 71% of the previous year's budget. To put it another way, if those monies were divided among the 12 north central states (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) alone, then Illinois would lose 26% of its ACP monies in FY 1983. The prospects are that Illinois may lose even more of its cost-sharing money. Thus, while a number of us involved in developing the 208 plan felt that a voluntary program to reduce soil erosion was destined to failure, even those who were optimistic must now experience serious doubts about our abilities to carry this plan to a successful conclusion. And to these doubts that I express, some will undoubtedly respond, "But, what about our set-aside program? It's encouraging good erosion control practices." My response is that, set-aside works like cost-sharing -- only the soil conservation benefits are even more short-lived. The point is that farmland will always be treated less than adequately, that is exceeding T-value, with respect to soil erosion unless we, the public, make soil conservation economical for the farmer.

On the positive side, the Division of Natural Resources has completed the Erosion and Sediment Control Guidelines and local Soil and Water Conservation Districts are finalizing their standards. Similarly, implementation of educational programs, informational promotions, and demonstration projects have been pursued with deliberateness. These activities serve both as positive examples and as strong reminders of proper conservation practices. Nevertheless, I cannot ignore the historical antecedents of this current effort to promote voluntary conservation programs. During my review of 208 activities in preparation for this presentation, I reread the minority reports of the various task force members. Most said that the erosion control program was a "do nothing solution," that education and volunteerism had not worked in the past, and that the new program would fail. Thus, on the matter of soil erosion, I leave the participants, especially the agencies responsible for implementation, with the question: Will we fail this time, as well?

As I turn from soil erosion to the question of the reduction of pesticide pollution, I find little about which to be optimistic. The Pesticide Subcommittee of the 208 planning task force deferred largely to the Soil Erosion Subcommittee and its plan to reduce erosion as a means of stemming the flow of pesticide pollutants into ponds, lakes, strams, and rivers. Consequently, much of the success in attaining clean water with respect to pesticides depends on the success or failure of sediment and erosion control. We can only adopt a "wait and see" posture. On the other hand, one can begin to assess Illinois' progress in minimizing pesticide pollution by using appropriate fish kill data as an indicator. In 1981, the number of incidents of alleged pesticide related fish kills increased dramatically. The frequency of incidents reported to the Illinois Department of Conservation (IDOC) and the IEPA increased at least five fold. While I recognize that 1981, represented an unusual year for certain insect pest problems and that unusually heavy and frequent rainfalls created situations leading to increased pesticide run-off, the incidents highlight the problem of containing the less persistent but highly toxic organophosphate and carbamate pesticides used in agriculture today. I also wish to point out that we all too often dismiss a particular season as beng unusual, but we need to recognize that weather conditions may, in fact, repeat themselves several years in succession. The implications are apparent; fish populations will become depauperate as well as other animals in a given area. Thus by this measure, we have made little progress.

The Illinois plan for solving pesticide pollution problems also included a number of specific recommendations. First, a State Pesticide Monitoring Board was to be established to coordinate a state monitoring program. To my knowledge no such board has been established or has a paid staff person been designated or appointed by ENR. The several activities that were to be supervised through the Monitoring Board also appear in disarray. Monitoring, or at least incident follow-up, is part of the IEPA's and IDOC's activities; but his effort is not the systematic surveillance recommended by the 208 plan. The IEPA Monitoring Unit has completed one study (Kelly and Hite, 1981) on the analysis of surficial sediments; however, it represents only one aspect of an appropriate monitoring program.

A second recommendation was the "evaluation of all pesticides used in Illinois in the Metcalf laboratory model aquatic ecosystem . . ." Initial studies have been completed; the report (Francis and Metcalf, 1981) indicates that this an ongoing effort. Clearly this effort will provide invaluable information which could be a basis for decision-making on pesticide use in Illinois. My only concerns regarding this effort focus on questions of continued funding, the dissemination of the information, and its application to the registration process in 24(c) applications. I do not know the status of funding research using the Metcalf system nor do I know if the data is reaching those individuals who evaluate the registration of pesticides. I would hope that any short-comings in this area can be addressed by the EPA.

Still other Pesticide Subcommitee recommendations have not been addressed. Dr. Owen (1982) of the University of Illinois indicates that there are no current plans or monies to continue the pesticide use survey program. Similarly there are not new monies as a result of the 208 planning and recommendations to insure the enhanced growth and development of Integrated Pest Management (Luckmann, 1982). The final recommendatin dealt with an educational program on pesticide container recycling and disposal. A project report from IEPA indicates that considerable progress has been made in the recycling of metal containers. However, much work is yet to be done and I am not aware of funding earmarked to ensure the establishment of maintenance of these activities.

In conclusion, it would appear that there are many short-comings in 208 implementation. It is clear that:

1. We need to find a way to pay farmers a fair price for reducing soil erosion losses to or below, T-value;
2. We need to find a way to enhance the implementation of IPM because it will lead to a reducton of pollution from pesticides; and
3. We need a more careful evaluation and monitoring of the pesticides we register and use in Illinois.

Thus, I hope that this meeting today will reconfirm a commitment to addressing the deficiencies that I have noted and that we can make real progress in achieving water quality through the control of soil erosion and the reduction of pesticide pollution.

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ILLINOIS FARMERS UNION VIEWS ON IMPLEMENTING SOIL CONSERVATION PROGRAMS

Harold Dodd, President
Illinois Farmers Union

Illinois has developed a serious erosion problem, particularly since the abolishment of the Farm Program in the early seventies. Before that time, thousands of acres of our more fragile and sloping land was committed to set aside or soil bank, but at the insistence of the then Secretary of Agriculture, farmers plowed everything from fence to fence to feed a hungry world, and of course soil erosion is the greatest cause of water pollution.

The present economic conditions prevailing at the farm-gate prevents many farmers from carryiung out soil conservation practices that they know they should.

a. When prices of farm commodities are cheap the farmer has to row crop everything in an attempt to survive financially.

b. With unfavorable economics, the farmer simply does not have the means for terracing, building cement wash-stops, and establishing grass waterways.

I believe we have in the past two years been somewhat successful in our attempt to create an awareness of the problem and to show the farmers some new techniques in controlling erosion.

I'm still optimistic about reaching our objectives voluntarily, but I believe we should and may have to have some financial assistance before totally reaching T.

I believe that an attractive land retirement system administered by A.S.C.S. would accomplish a multitude of important things.

a. Do more toward soil erosion than any other one thing I can think of.

b. Create more wildlife habitat which thousands are clamouring for.

c. Conserve our more fragile soil for a time when we need it more.

d. Conserve considerably on fuel.

e. By removing this type of land from row crop we would enhance prices for row crop commodities from the land that is more suitable for row crop.

f. Slow down the demise of the family farmer from the land through improved income.

In closing, let me say, that I appreciate the opportunity to present some of my views on this subject, and that I also considered it a privilege to sit in on the 20 meetings held in Champaign, Illinois, discussing the - 208 Water Quality Plan.

WATER QUALITY COMMENTS - SIERRA CLUB

Aaron M. Wysong
Sierra Club Sangamon Valley Group

Most of what has been covered at the seminar is in line with the goals of the Sierra Club.

We would agree with and encourage the use of biological controls of insects by expanded application of crop rotations and insect predators. Reliance on chemical controls should be reduced as much as is economically possible. The pesticide and herbicide container handling program is good and should be expanded upon.

It should be noted that fence row, ditch, stream bank and river bank erosion is still continuing at an alarming rate. Construction site erosion also seems to be unabated with no obvious attempts at control.

More on site conservation of water and soil is needed. Both the Soil Conservation Service and Corps of Engineers seem to have oriented their efforts toward downstream structures as a solution when tillage techniques and cover crops would be less costly and more effective.

In this regard there is a possibility the use of "no till" methods may save soil but in so doing may increase herbicide and insecticide pollutants in our water. Some land that is being "no tilled" should not be tilled at all.

Some very effective conservation methods require little or no new equipment such as chisel-discing corn stalks instead of fall plowing and doing no tillage in the fall on bean stubble.

Is the money that is being spent on soil surveys in counties that already have soil maps being well spent? Perhaps we are only rearranging old information with new names and numbers.

Illinois soil conservation districts should be encouraged to push for reaching "T" values early and for setting high standards. Progress for the last 50 years has been much too slow in conservation of soil and water.

We need to reach the absentee owners and managers who seem to sometimes view land only as a number of dollars in the assets columns of their accounts.

LEAGUE OF WOMEN VOTERS VIEWS ON THE PROGRESS OF IMPLEMENTATION OF ILLINOIS WATER QUALITY MANAGEMENT PLAN

Judy Beck, Vice President
Natural Resources Coordinator
League of Women Voters of Illinois

My name is Judy Beck and I am a Vice President of the League of Women Voters of Illinois with the portfolio of Natural Resources Coordinator. I am substituting for Louise Rome who served as the League representative on the task force and continues to serve the League as an enviromental consultant to our State Board of Directors.

In preparation for compiling the League's views on the progress of implementation of Illinois' Water Quality Management Plan, I reviewed many old files. I was immediately struck with just how long the League and many others have been discussing the SAME set of water quality problems. In 1978, Louise Rome stated in her minority opinion that "the subcommittee on soil erosion and sedimentation has recommended a soil productivity program rather than a water quality management program." I wouldn't argue with that if it was working, but to date the plan seems to be protecting neither soil or water.

Erosion and sediment control have been identified as the number one water resource problem facing the state, according to the January 1982 edition of Illinois Water. To respond to this all I need to do is quote from our statement of March, 1979:

> "In addition to our general support for the overall plan, we do, however, have more specific comments on certain sections of your draft document. To begin, the League strongly endorses your recognition of the fact that soil erosion from agricultural land is one of this nation's major water pollution problems and that we can no longer depend on voluntary efforts to correct or even to help alleviate the problem. It has been estimated that the U.S is currently in a position where topsoil erosion from water and wind is perhaps 25% greater than it was in the dust bowl days of the 1930's, with agricultural production having increased only because post WWII technology in the form of chemical pesticides and fertilizers has been substituted for inherent soil productivity. A regulatory program for protecting what may be our nation's most valuable resource - its land - is long overdue; and, if anything, we would like to see the proposed mechanisms for enforcement strengthened. Time frames should be tightened and penalities for non-compliance should become progressively more stringent.

> Although the League believes that the costs of pollution abatement are a responsibility of the polluter, we do acknowledge that some help should be made available because of the urgency and immediacy of the problem and because of the tremendous costs involved. Therefore, we also support the concept of cost sharing for implementation of agricultural BMP's, particularly in cases where the application of a conservation practice will significantly affect farm income. It is not without some . . . ."

As we said in 1978, "The track record of agriculture under programs initiated by the federal government as long ago as 1935, is not a good one. Sediments and their pollutants, borne from farmlands, continue to clog our waterways. A voluntary program, without the regulatory backup required by the regulations, is a license for present practices to continue, which is to say, to do nothing at all. The League recommends that the voluntary agricultural program be limited to no more than a 5 year period. A regulatory program should be spelled out in the Plan."

Agricultural Erosion Control

The League can see the desirability of a unified, state-wide approach to the problems of pollution from agricultural sites, and we do not have a particular preference for goals based on a percentage of land where BMPs are in force, over goals based on staged reduction of erosion of tons of soil per acre. In both the state 208 Plan and NIPC's original, however, the program for farmers is far less stringent than the requirements placed upon municipalities and industry. Though farmers have unique economic problems, compliance for them should be more nearly consistent with compliance requirements for others. Enforcement mechanisms could include denial of federal subsidies if BMPs are not put in place, or denial of lower assessments granted to farmers whose lands qualify as "prime agricultural land". Farmers who obtain subsidies for planning or implementation from the USDA should be required by law to guarantee continued compliance for at least ten years. A voluntary program should be permitted for no longer than a five year period.

Pesticide Container Disposal

Deletion of this provision is inequitable with respect to requirements placed on others, such as business and industry. Farmers should expect to obey the same kinds of laws that place limitations of business' disposal of toxic waste containers. Recent articles in the Chicago Sun Times give very good reason for believing that education, alone, is not enough, and that regulation is necessary. An adequate control program is a much faster route to prevention than an education program that has clearly failed with some industrial polluters.

In a few weeks the League of Women Voters of Illinois will hold its annual planning meeting where goals for 1982-83 will be set. The natural resources committee is developing a program for the year that will set farmland protection and water quality as the top environmental priority. We will be educating our new members and the public on the present problems and suggesting solutions. We will sponsor public meetings and "go see tours", use available materials and hopefully produce some of our own.

These efforts will be aimed at building a commitment by the citizens of Illinois to protect two of its most important natural resources.

Appendix A

Interagency Agreement
on
Targeting of Manpower and Financial Resources*

TO:

Agricultural Stabilization and Conservation Service
- County Committee
- County Executive Directors
- District Directors

Illinois Cooperative Extension Service
- Agricultural Advisers
- Regional Directors

Soil and Water Conservation Districts
- Board of Directors
- Administrative Aides
- Executive Directors
- Educational Coordinators

Soil Conservation Service
- District Conservationist
- Area Conservationist
- RC&D Coordinators

Illinois Department of Agriculture
- Regional Coordinators

Illinois Environmental Protection Agency
- Manager Public Participation

Chairman County Board of Supervisors

RE: Targeting of manpower and financial resources to solve soil and water conservation problems.

The targeting of resources to meet soil and water conservation treatment goals has been discussed many times by each member of the "conservation family". A unified effort of close cooperation and coordination between these groups at the state and local level is essential for the State of Illinois to maintain its valuable soil and water resources.

The need to target conservation efforts has become more important with increased limitations on manpower and financial resources. Therefore, a systematic process to evaluate soil and water conservation needs and a uniform method to seek State and Federal assistance on high priority project areas have been developed.

State level leadership has been provided to establish a procedure for setting priorities on soil and water resource problems and the development of a uniform method to identify, screen and prioritize rural water resource and lake rehabilitation projects. However, the successful implementation of these programs is dependent upon your support at the county level.

We must coordinate our efforts in order to address priority soil and water conservation problems successfully. We endores this process and urge each of you to give your full cooperation in the identifying and directing of resources toward priority areas.

Sincerely,

Larry Werries, Director
Illinois Department of Agriculture

Roger Rowe, President
Association of Illinois Soil and
Water Conservation Districts

Herman C. Warsaw, Chairman
ASC State Committee

Warren Fitzgerald, State
Conservationist
Soil Conservation Service

Gilbert Fricke, State Executive
Director
Agricultural Stabilization and
Conservation Services

Delbert Haschemeyer, Acting Director
Illinois Environmental Protection
Agency

William Oschwald, Director
Illinois Cooperative Extension Service

Robert W. Chambers, Director
Farmers Home Administration

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*This agreement was endorsed by all parties listed in August 1981. A Telenet program sponsored by the Cooperative Extension Service was aired statewide in September 1981, to explain implications and administration of the agreement to each organization's regional and county level representatives.

Appendix B

Seminar
for the
Agriculture Task Force on Non-Point Sources of Pollution
on the
Status of Illinois' Water Quality Management Plan
Implementation Programs

Department of Agriculture Auditorium
State Fairgrounds
Springfield, Illinois
Tuesday, April 13

Agenda

8:30 - 9:00	Registration*
9:00 - 9:05	Welcoming Comments from the Illinois Department of Agriculture - Larry Werries, Director
9:05 - 9:10	Welcoming Comments from the Illinois Environmental Protection Agency - Roger A. Kanerva, Manager of Environmental Programs
9:10 - 9:20	Review of Recommendations in the Illinois Water Quality Management Plan - A. G. Taylor, Illinois EPA
9:20 - 9:30	The Illinois EPA Livestock Waste Program Policies and Procedures - Eric Ackerman, Illinois EPA
9:30 - 9:40	Progress in Implementing the Recommended BMP's for Livestock Waste Management - Dale Vanderholm, University of Illinois Agricultural Experiment Station
9:40 - 9:50	The Livestock Producers Outlook on Implementation of the Livestock Waste Management Program - John Killam, Illinois Livestock Association
9:50 - 10:00	Development of an Integrated Pest Management Program in Illinois - William H. Luckmann, Illinois Natural History Survey
10:00 - 10:10	Experiences in Organizing Pesticide Container Recycling Projects - Jim Mergen, Illinois Farm Bureau
10:10 - 10:20	Pesticide Use and Persistent Water Quality Problems - A. G. Taylor, Illinois EPA

10:20 - 10:30 Issues Relating to Fertilizer Use and Plant Nutrients - A. G. Taylor, Illinois EPA

10:30 - 10:40 Addressing Water Quality in Developing the Illinois Forest and Related Resources Plan - Dick Little, Illinois Department of Conservation

10:40 - 10:50 Illinois Farm Bureau's Special Projects for Conservation Education - Jon Scholl, Illinois Farm Bureau

10:50 - 11:00 State Agency Involvement in Vocational Agriculture Curriculum Development and Demonstration Projects on Conservation Tillage - Randy Grove, Illinois Department of Agriculture

11:00 - 11:10 Soil and Water Conservation Districts' Special Projects for Conservation Education and Curriculum Development - Hillard Morris, Association of Illinois Soil and Water Conservation Districts

11:10 - 11:20 Extension Programs for Implementing the Water Quality Management Plan - T. Roy Bogle, Cooperative Extension Service

11:20 - 11:30 Agricultural Research for Evaluating Management Techniques to Improve Water Quality - Raymond G. Cragle, University of Illinois Agricultural Experiment Station

11:30 - 1:00 Lunch

1:00 - 1:15 Explanation of the Division of Natural Resources - Jim Frank, Illinois Department of Agriculture

Soil Erosion and Water Quality Advisory Committee Activities

Effects of Block Grants on the State's Program

Grants to Districts

1:15 - 1:20 Are We Making Progress Towards Meeting Our Soil Erosion Goals? - Gary Wood, Illinois Department of Agriculture

1:20 - 1:25 State Cost-Share Programs and Soil Survey Support - Alan Meyers, Illinois Department of Agriculture

1:25 - 1:30 Status of District Soil Erosion Programs and Standards and the SWCD Administrative Aide Program - Alan Meyers, Illinois Department of Agriculture

1:30 - 1:35	Selecting Watershed Projects and the Local Priority Setting Process - Marvin Hubbell, Illinois Department of Agriculture
1:35 - 1:40	Summary of the Division of Natural Resources Goals and Activities - Jim Frank, Illinois Department of Agriculture
1:40 - 1:50	Watershed Monitoring Projects to Evaluate BMP Implementation - Tom Davenport, Illinois EPA
1:50 - 2:00	Programmatic Changes in SCS Operations in Response to USDA's Preferred Program - Ronnie Murphy Soil Conservation Service
2:00 - 2:10	Outlook for Federal Cost-Share Programs for Conservation - Gilbert Fricke, Agricultural Stabilization and Conservation Service
2:10 - 2:20	Changes in USEPA Strategies for Controlling Agricultural Non-Point Source Pollution - Gary Williams, USEPA Region V
2:20 - 2:30	Prospects for Program Continuation and Evaluation - Robert P. Clarke, Illinois EPA
-	Task Force Representatives' Views on Implementation:
2:30 - 2:40	Len Gardner, Illinois Farm Bureau
2:40 - 2:50	Roger Rowe, Association of Illinois Soil and Water Conservation Districts
2:50 - 3:00	Malcolm Levin, Sangamon State University Environmental Studies Program
3:00 - 3:10	Harold Dodd, Illinois Farmer's Union
3:10 - 3:20	Aaron Wysong, Sierra Club
3:20 - 3:30	Judy Beck, League of Women Voters of Illinois
3:30 - 4:00	Discussion Period
4:00	Adjourn

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*There will be no fee for this conference, however participants are asked to register in the exhibit area adjacent to the auditorium in order to receive a seminar proceedings document being published by the Department of Energy and Natural Resources.

APPENDIX C

PROGRAM PARTICIPANTS AND REGISTRANTS

Name	Affiliation
Eric O. Ackerman	Illinois Environmental Protection Agency
Dr. G. M. Aubertin	Southern Illinois University Department of Forestry
Robert G. Baker	Water Resources Commission
Ron Barganz	Illinois Environmental Protection Agency
Judy Beck	League of Women Voters of Illinois
Wayne W. Behrens	Illinois Department of Agriculture
Carol Beim	Illinois Environmental Protection Agency
Nani G. Bhowmik	Illinois State Water Survey
Dr. T. Roy Bogle	University of Illinois Cooperative Extension Service
Joan Bradford	Association of Illinois Soil and Water Conservation Districts
Randy Bridson	Illinois Farm Bureau
Jacqueline Bruemmer	Southwestern Illinois Planning Commission
Bill Busch	Illinois Environmental Protection Agency
Robert P. Clarke	Illinois Environmental Protection Agency
Mary Clement	Southwestern Illinois Planning Commission
Dr. Raymond G. Cragle	University of Illinois Agricultural Experiment Station
Tom E. Davenport	Illinois Environmental Protection Agency
George H. Deverman	Association of Illinois Soil and Water Conservation Districts
Dwight M. Dunbar	Illinois Fertilizer and Chemical Association
Harold Dodd	Illinois Farmers Union
Lloyd Dolbeare	Illinois Association of Farmer Elected Committeemen
Dr. R. G. Dumsday	University of Illinois Department of Agriculture Economics
John J. Eckes	Soil Conservation Service
Aurther Eicken	Illinois Department of Conservation
Bob Eisenhart	Illinois Environmental Protection Agency
Charlyn Fargo	State Journal Register
James Filippini	U.S. Environmental Protection Agency
Warren J. Fitzgerald	Association of Illinois Soil and Water Conservation Districts
Jim Frank	Illinois Department of Agriculture
Elmer A. Frerichs	State Soil Erosion and Water Quality Advisory Committee
Gilbert Fricke	Agricultural Stabilization and Conservation Service

Name	Affiliation
Leonard Gardner	Illinois Farm Bureau
Maurice Gordon	Illinois Corn Growers Association
Randy Grove	Illinois Department of Agriculture
Charles W. Guthrie	American Agriculture Movement of Illinois
J. William Hammel	Illinois Environmental Protection Agency
John Hawkins	WMAY Radio
Harold Hendrickson	Association of Illinois Soil and Water Conservation Districts
Marvin Hubbel	Illinois Department of Agricultural
Bill Hutton	Illinois Environmental Protection Agency
Russel Jeckel	Illinois Pork Producers Association
Dr. Joe H. Jones	Southern Illinois University Department of Plant and Soil Science
Roger A. Kanerva	Illinois Environmental Protection Agency
Peggy Kaye	WTAX Radio
Kenneth Kesler	State Soil Erosion and Water Quality Advisory Committee
John A. Killam	Illinois Livestock Association
Elmer King, Jr.	Illinois Agriculture Association
Keith King	Associated Milk Producers, Incorporated
Bruce Kinnett	Senate Republican Staff
Homer Kuder	Agriculture Task Force on Non-point Sources of Pollution
Marie Lauricella	Illinois Department of Energy and Natural Resources
Dr. Dixon Lee, Jr.	Southern Illinois University School of Agriculture
Ming T. Lee	Illinois State Water Survey
Malcolm P. Levin	Sangamon State University Environmental Studies Program
Dick R. Little	Illinois Department of Conservation
John Lowrey	U.S. Environmental Protection Agency Soil Conservation Service
William H. Luckmann	Illinois Natural History Survey
Jim Mergen	Illinois Farm Bureau
Alan Meyers	Illinois Department of Agriculture
James P. Monier	State Soil Erosion and Water Quality Advisory Committee
Hillard Morris	Association of Illinois Soil and Water Conservation Districts
Ronnie Murphy	Soil Conservation Service
Morris Nelson	Illinois Farm Bureau
Peter Paladino	Illinois Department of Conservation
Doug Peterson	University of Illinois Agricultural Communications
Dr. James R. Peterson	Metropolitan Sanitary District of Greater Chicago

Name	Affiliation
Darrell Roegge	Land of Lincoln Soybean Association
Roger Rowe	Association of Illinois Soil and Water Conservation Districts
Jon Scholl	Illinois Farm Bureau
Frank H. Schoone	Agricultural Stabilization and Conservation Service
Dr. Wesley D. Seitz	Univerity of Illinois Department of Agricultural Economics
Earl T. Shafer	State Soil Erosion and Water Quality Advisory Committee
Larry Stearns	Illinois Environmental Protection Agency
Dr. Jack A. Stewart	International Minerals and Chemical Corporation
A. G. Taylor	Illinois Environmental Protection Agency
Dr. Dale H. Vanderholm	University of Illinois Agricultural Experiment Station
Robert D. Walker	University of Illinois Cooperative Extension Service
Tim Warren	Illinois Department of Energy and Natural Resources
Fairlene Weihe	Illinois Women for Agriculture
Larry Werries	Illinois Department of Agriculture
Gary Williams	U.S. Environmental Protection Agency
Gary Wood	Illinois Department of Agriculture
Aaron M. Wysong	Sierra Club
Walt Zyznieuski	Illinois Department of Energy and Natural Resources

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